PUBLIC WORKS APPROPRIATIONS FOR 1957

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HEARINGS

BEFORE THE

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON PUBLIC WORKS APPROPRIATIONS

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CARSON CULP, *Staff Assistant to the Subcommittee*

BONNEVILLE POWER ADMINISTRATION
SOUTHEASTERN POWER ADMINISTRATION
SOUTHWESTERN POWER ADMINISTRATION
TENNESSEE VALLEY AUTHORITY

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UNITED STATES
GOVERNMENT PRINTING OFFICE
77044 WASHINGTON : 1956

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PUBLIC WORKS APPROPRIATIONS FOR 1957

WEDNESDAY, APRIL 25, 1956.

BONNEVILLE POWER ADMINISTRATION

WITNESSES

DR. WILLIAM A. PEARL, ADMINISTRATOR
EUGENE C. STARR, CHIEF ENGINEER
MILLER EVANS, ACTING DIRECTOR OF OPERATIONS AND MAINTENANCE
EARL D. OSTRANDER, DIRECTOR OF ADMINISTRATIVE MANAGEMENT
ROGER L. CONKLING, DIRECTOR OF BUDGET AND MANAGEMENT
MORGAN D. DUBROW, MANAGER, WASHINGTON, D. C., OFFICE

CONSTRUCTION

	1955 actual	1956 estimate	1957 estimate
Program by activities:			
1. Construction in progress	$21,134,196	$17,767,434	$12,628,000
2. New construction	3,226,802	5,952,000	10,073,000
3. General plant	668,916	480,000	421,000
Total obligations	25,029,914	24,199,434	23,122,000
Financing:			
Unobligated balance brought forward	−14,857,473	−14,021,434	−4,422,000
Unobligated balance carried forward	14,021,434	4,422,000	
Appropriate (adjusted)	24,193,875	14,600,000	18,700,000

Obligations by objects

Object classification	1955 actual	1956 estimate	1957 estimate
BONNEVILLE POWER ADMINISTRATION			
Total number of permanent positions	1,480	1,240	1,227
Full-time equivalent of all other positions	35	46	26
Average number of all employees	1,291	1,265	1,243
Number of employees at end of year	1,250	1,250	1,250
Average salaries and grades:			
General schedule grades:			
Average salary	$5,198	$5,654	$5,708
Average grade	GS–7.8	GS–7.8	GS–7.8
Ungraded positions: Average salary	$5,298	$5,446	$5,427
01 Personal services:			
Permanent positions	$6,852,735	$6,761,700	$6,714,300
Positions other than permanent	177,342	232,500	126,300
Regular pay above 52-week base	21,455	20,900	
Payment above basic rates	137,544	129,300	135,300
Excess of annual leave earned over leave taken	13,653		
Total personal services	7,202,729	7,144,400	6,975,900
02 Travel	702,997	753,700	733,000
03 Transportation of things	99,863	161,600	162,300
04 Communication services	87,836	91,500	87,200
05 Rents and utility services	75,139	61,800	59,700
06 Printing and reproduction	10,948	10,300	10,000
07 Other contractual services	954,146	566,500	237,000
Services performed by other agencies	30	80	
08 Supplies and materials	5,101,463	3,673,054	5,082,600
09 Equipment	5,252,002	5,960,800	5,280,800
10 Lands and structures	6,135,662	6,407,700	5,201,400
11 Grants, subsidies, and contributions	36,441	7,900	7,900
13 Refunds, awards, and indemnities	10,983	15,900	15,900
Subtotal	25,670,239	24,855,234	23,853,700
Less services performed for—			
Operation and maintenance	577,633	600,200	696,700
Other accounts	70,395	55,600	35,000
Total, Bonneville Power Administration	25,022,211	24,199,434	23,122,000
ALLOCATION TO BUREAU OF PUBLIC ROADS DEPARTMENT OF COMMERCE			
01 Lands and structures	7,703		
Total obligations	25,029,914	24,199,434	23,122,000

Budget authorizations, expenditures and balances

	1955 actual	1956 estimate	1957 estimate
BUDGET AUTHORIZATIONS AVAILABLE			
Appropriation	$24,314,000	$14,600,000	$18,700,000
Transferred to "Salaries and expenses, Office of the Solicitor, Interior" (68 Stat. 362)	−120,125		
Adjusted appropriation	24,193,875	14,600,000	18,700,000
Balance brought forward:			
Unobligated	14,857,473	14,021,434	4,422,000
Obligated	32,073,288	23,887,381	20,386,815
Total budget authorizations available	71,124,636	52,508,815	43,508,815
EXPENDITURES AND BALANCES			
Expenditures—			
Out of current authorizations	33,215,821	7,000,000	10,000,000
Out of prior authorizations		20,700,000	14,400,000
Total expenditures	33,215,821	27,700,000	24,400,000
Balance carried forward:			
Unobligated	14,021,434	4,422,000	
Obligated	23,887,381	20,386,815	19,108,815
Total expenditures and balances	71,124,636	52,508,815	43,508,815

Operation and Maintenance

Program and financing

	1955 actual	1956 estimate	1957 estimate
Program by activities:			
1. System operation and maintenance	$5,295,510	$5,863,700	$6,424,000
2. Power contracts and rates	299,852	266,100	268,000
3. General administration	621,507	670,200	708,000
Total obligations	6,216,869	6,800,000	7,400,000
Financing:			
Unobligated balance no longer available	14,823		
Appropriation (adjusted)	6,231,692	6,600,000	7,400,000
Proposed supplemental due to pay increases		200,000	

Obligations by objects

Object classification	1955 actual	1956 estimate	1957 estimate
Total number of permanent positions	941	900	975
Full-time equivalent of all other positions	17	17	12
Average number of all employees	838	887	947
Number of employees at end of year	900	920	975
Average salaries and grades:			
General schedule grades:			
Average salary	$5,198	$5,654	$5,708
Average grade	GS–7.8	GS–7.8	GS–7.8
Ungraded positions: Average salary	$5,298	$5,446	$5,427
01 Personal services:			
Permanent positions	$4,358,506	$4,886,200	$5,298,000
Positions other than permanent	85,022	84,700	54,500
Regular pay above 52-week base	13,606	15,100	
Payment above basic rates	142,522	157,900	198,500
Excess of annual leave earned over leave taken	8,729		
Total personal services	4,608,385	5,143,900	5,551,000
02 Travel	155,142	184,400	209,700
03 Transportation of things	30,216	25,000	32,500
04 Communication services	154,437	181,500	187,800
05 Rents and utility services	64,770	70,200	73,200
06 Printing and reproduction	2,961	4,000	4,300
07 Other contractual services	278,813	223,100	240,100
Services performed by other accounts	577,633	600,200	696,700
08 Supplies and materials	307,053	352,400	389,400
11 Grants, subsidies, and contributions	29,297	5,300	5,300
13 Refunds, awards, and indemnities	8,162	10,000	10,000
Total obligations	6,216,869	6,800,000	7,400,000

Budget authorizations, expenditures and balances

	1955 actual	1956 estimate	1957 estimate
BUDGET AUTHORIZATIONS AVAILABLE			
Appropriation	$6,200,000	$6,600,000	$7,400,000
Transferred (69 Stat. 240) from—			
"Salaries and expenses, Office of the Secretary of the Interior"	16,153		
"Operaton and maintenance, Southwestern Power Administration"	4,418		
Transferred from "Salaries and expenses, Office of the Solicitor, Interior" (68 Stat. 362 and 69 Stat. 240)	11,121		
Adjusted appropriation	6,231,692	6,600,000	7,400,000
Proposed supplemental due to pay increases		200,000	
Obligated balance brought forward	84,552	101,762	101,762
Increase in prior year obligations	38,044		
Total budget authorizations available	6,354,288	6,901,762	7,501,762
EXPENDITURES AND BALANCES			
Expenditures—			
Out of current authorizations	6,119,148	6,500,000	7,123,060
Out of anticipated supplemental appropriation		192,300	7,700
Out of prior authorizations	118,555	107,700	92,300
Total expenditures	6,237,703	6,800,000	7,223,060
Unobligated balance no longer available (expiring for obligation)	14,823		
Obligated balance carried forward	101,762	101,762	278,702
Total expenditures and balances	6,354,288	6,901,762	7,501,762

SUMMARY JUSTIFICATION DATA

Mr. RABAUT. Next is Bonneville Power Administration. We will insert pages BP2 to BP17, inclusive, in the record at this point.

(Information referred to follows.)

GENERAL STATEMENT

FISCAL YEAR 1957 ESTIMATES

Total programs of the Bonneville Power Administration for the fiscal years 1956 and 1957 are summarized below:

	Fiscal year 1956 estimate	Fiscal year 1957 estimate
Construction program:		
New appropriations	$14,600,000	$18,700,000
Utilization of carryover from prior fiscal years	9,599,000	4,422,000
Total, construction program	24,199,000	23,122,000
Operation and maintenance program	[1] 6,800,000	7,400,000
Reimbursements	573,000	333,000
Total programs	31,572,000	30,855,000

[1] Includes $200,000 proposed supplemental for costs of annual employee pay increase.

These programs result in appropriation requirements for fiscal year 1957 of $26,100,000. Fiscal year 1957 appropriation requirements are compared in the following table with appropriations granted or anticipated for fiscal year 1956:

Appropriation	1956 act	1957 estimate
Construction	$14,600,000	$18,700,000
Operation and maintenance	[1] 6,800,000	7,400,000
Total	21,400,000	26,100,000

[1] Includes $200,000 proposed supplemental for costs of annual employee pay increase.

The total programs of the Administration are less in fiscal year 1957 than in fiscal year 1956, although the fiscal year 1957 appropriation request represents a substantial increase in requirements for new funds. This results from the availability in the fiscal year 1956 of $9.6 million from prior years to reduce construction appropriation needs, in comparison with an estimated carryover of construction funds from fiscal year 1956 to fiscal year 1957 of $4.4 million.

As indicated in the program table, the fiscal year 1957 construction program totals $23.1 million as compared with a construction program of $24.2 million in fiscal year 1956. This reduction in construction requirements results from the fact that major portions of the transmission capacity required to carry the additional output of the new Federal generating plants which are a part of the United States Columbia River power system will have been completed or be substantially underway prior to fiscal year 1957.

The increase of $600,000 in operation and maintenance requirements results from the expansion of the transmission system as it has been enlarged to carry to load centers the production of the new Federal plants. Additional costs for operation and maintenance occur as additional lines and substations are added, and as pool operations become more complex due to the greater number of plants operated in combination.

Responsibilities and activities of Bonneville Power Administration

The Administration is responsible for the disposition of electric power produced by 16 Federal generating plants in service or under construction in the Pacific Northwest. To carry out this responsibility, it constructs and operates high-voltage transmission facilities which integrate the Federal power projects, transmit the output of Federal powerplants to load centers, and interconnect the Federal system with non-Federal utility systems throughout the region. In addition, the Administration develops basic data relative to the long-term power demands of the region to provide a firm base for transmission planning and as a guide to the additional generation which will be needed; conducts joint engineering studies with other regional power systems to determine the most efficient transmission network for service to the region; and actively participates with other Government agencies and non-Federal groups in planning for the continuing development of the region's potential hydroelectric resources to meet power needs.

Fiscal year 1957 construction requirements

Additional scheduled Federal generating capacity.—The Administration's fiscal year 1957 construction program provides for the completion or continuation of construction of facilities which have been previously authorized, and for the initiation of construction of the additional transmission capacity required to carry to load centers the power production of the new Federal generating installations which are scheduled to be in operation by January 1960. Such additional capacity must be in service, of course, at the time the new generators are ready for operation. It is necessary to initiate work in fiscal year 1957 on all new major transmission circuits and substations scheduled for energization by January 1960, since about 3½ years normally are required for construction of major system additions.

As of the beginning of fiscal year 1957, peaking capacity installed on the United States Columbia River power system will total 4,976,600 kilowatts. In the ensuing 4 fiscal years, 1,985,900 kilowatts of additional capacity will be added according to present installation schedules. This will bring to a total of 6,962,500 kilowatts the peaking capacity on the system at the end of fiscal year 1960, the

closing year of the current budget period. These data are shown in detail in the following table:

Peaking capacity in thousands of kilowatts

Project	In service as of July 1, 1956	Scheduled for installation fiscal year 1957 budget period				Total in service as of July 1, 1960	Scheduled for later budget periods
		Fiscal year 1957	Fiscal year 1958	Fiscal year 1959	Fiscal year 1960		
Bonneville	570.0					570.0	
Grand Coulee	2,319.0					2,319.0	
Hungry Horse	328.0					328.0	
Detroit	115.0					115.0	
McNary	966.0	161.0				1,127.0	
Big Cliff	20.7					20.7	
Lookout Point	138.0					138.0	
Dexter	17.3					17.3	
Albeni Falls	49.0					49.0	
Chief Joseph	441.6	294.4	294.4	147.2		1,177.6	
Chandler	12.0					12.0	
The Dalles			358.8	358.8	358.8	1,076.4	179.4
Roza			6.2	6.3		12.5	
Cougar							28.8
Ice Harbor							310.5
Hills Creek							34.5
Total	4,976.6	455.4	659.4	512.3	358.8	6,962.5	553.2
Total scheduled							7,515.7

Joint studies.—All electrical facilities proposed for construction in this budget have resulted from joint load, resource and engineering studies made by the Administration in cooperation with the customer-utilities affected. Major system additions have been the subject of intensive analyzer board studies in which all of the larger utilities of the region have participated. These thorough joint studies, it is believed, insure that the facilities recommended are needed on the schedules proposed and do not duplicate any existing facilities, that they represent the best solution to the service problems at hand, and that they will constitute a wise investment for the Government.

Components of construction program.—The Administration's total fiscal year 1957 construction program compares with the fiscal year 1956 program by components as follows:

	1956 estimate	1957 estimate
Construction in progress	$17,767,434	$12,628,000
New construction	5,952,000	10,073,000
General plant (tools and equipment)	480,000	421,000
Total	24,199,434	23,122,000

These components are discussed in the following paragraphs:

Transmission and substation facilities under construction.—Requirements in fiscal year 1957 for construction in progress will total $12,628,000. Of this amount $12,263,000 is needed for major grid and local electrical facilities and $365,000 for general system additions.

The electrical facilities component includes the completion during fiscal year 1957 of 32 miles of 230-kilovolt or higher capacity transmission lines, 118 miles of 115-kilovolt transmission lines and 5 new substations having a total capacity of 320,000 kilovolt-amperes, and continuation of construction of 403 miles of 230-kilovolt and higher capacity lines, 63 miles of 115-kilovolt lines, and 3 new substations having a total capacity of 333,000 kilovolt-amperes. Major work under way in 28 existing substations will add 2,400,000 kilovolt-amperes of 230/345-kilovolt transformer capacity and 1,682,000 kilovolt-amperes of lower voltage transformer capacity, 75,000 kilovolt-amperes of reactive capacity, and miscellaneous other system improvements such as circuit breaker additions and

replacements and the addition of neutral boosters. The 230/345-kilovolt transformer capacity is associated with the conversion to 345-kilovolt operation of the McNary-Ross and Chief Joseph-Covington circuits.

The general system additions component includes three buildings for storage, operations and maintenance use, and installations of radio, telemetering, and supervisory control equipment.

The major electrical facilities which will be in progress of construction will transmit Chief Joseph power to the Puget Sound area (items 108, 109, and 204), interconnect The Dalles powerhouse with the main grid (item 116), and reinforce existing facilities in the Seattle, The Dalles, Portland, Coos Bay, Pasco, LaGrande, Wenatchee, and Spokane areas (items 113, 116, 119, 122, 125, 126, 132, 134, 136, 137, 142, and 143).

New projects.—New projects proposed will require $10,073,000 in fiscal year 1957, of which $9,874,000 is for electrical facilities and $199,000 for general system additions. The electrical facilities component includes the initiation in fiscal year 1957 of 88 miles of 230-kilovolt transmission lines, 167 miles of 115-kilovolt transmission lines, and 8 new substations having a total capacity of 334,000 kilovolt-amperes. Major work to be initiated in 19 existing substations will add 388,000 kilovolt-amperes of transformer capacity, 110,000 kilovolt-amperes of reactive capacity, and miscellaneous other system improvements, including circuit-breaker additions and replacements for completion in fiscal year 1957 and later years.

The more important of the scheduled new projects include a major increase in transformer capacity at the Keeler (Bethany) substation (item 128), a 230-kilovolt line from the Santiam substation to the Alvey substation to supply the increasing power requirement of southern Oregon (item 131), a 230/115-kilovolt substation and a 115-kilovolt line to reinforce facilities serving the eastern Grant County, Wash., area (item 139) series capacitors at Columbia substation to increase the capacity of the Grand Coulee-Olympia line (item 144), a 230-kilovolt line from Round Butte to Redmond to transmit the output of the Portland General Electric Co.'s proposed Pelton, Oreg., hydroelectric plant to the Administration's main grid (item 129), a substation at Toledo, Oreg., and 230-kilovolt line from the main grid to this point to supply additional loads in Lincoln County, Oreg., a 115-kilovolt line from Columbia Falls to Trego to serve northwestern Montana (item 635), and a 115-kilovolt line from the Big Eddy substation to DeMoss to serve north central Oregon (item 713).

The general system additions component includes four maintenance and storage buildings, and radio equipment.

Tools and equipment.—Requirements for vehicles, and construction, shop, laboratory, and communication test equipment, including replacement of obsolete and costly-to-maintain items, will total $421,000 in fiscal year 1957.

Fiscal year 1957 operation and maintenance requirements

Fiscal year 1957 requirements for operation and maintenance by major activities are summarized below with comparable fiscal year 1956 data:

Activity	Fiscal year 1956	Fiscal year 1957
System operation and maintenance	$5,863,700	$6,424,000
Power contracts and rates	266,100	268,000
General administration	670,200	708,000
Total, operation and maintenance	6,800,000	7,400,000

As is shown in the above table, increases requested in fiscal year 1957 are mainly for the direct operation and maintenance of the Administration's transmission grid. The continuing expansion of the system, to bring to load centers the additional supplies of Federal power becoming available in large blocks each year, makes these increases necessary.

The estimates for fiscal year 1957 represent a level of maintenance intended to provide the continuity of electrical service required by the Administration's position as the major wholesaler of power in the region and the consequent dependence of distributing utilities and large industrial plants on the Administration as a source of power. This level is based upon frequencies for maintenance of equipment and facilities which have been determined by the Administration's

experience as an operating utility. Consideration has been given to maintenance practices of other utilities and to manufacturers' recommendations. Frequencies of maintenance are generally lower than standards followed by the industry and recommended by manufacturers. Similarly, the level of operations has been established to provide the required reliability of service. Manning of substations is generally at the same level as previous years and reflects economies achieved through operating agreements with other utilities and through supervisory control of unmanned substations from central points or from manned substations.

Operational studies, analyses of power resources and loads required for system operation, and participation in the planning for the development of new power resources (determining operating plans for the Federal projects, coordination with the Northwest power pool, staff work for regional power development committees, and integration studies with prospective owners of new non-Federal generating plants, etc.) will be performed in fiscal year 1957 at only slightly higher levels than in 1956. The increases result from the need for more intensive technical studies of the effect of proposals for new non-Federal hydro projects as these come nearer to fruition. Preliminary studies currently being made need to be refined, both as to the impact upon the Government's system and methods of operation, and as to precise methods of integrating partnership plants with the Federal generating system.

The following statistics illustrate the continuing growth of the system:

Facilities in operation	July 1954	July 1955	July 1956	July 1957
Generating plants in operation	6	9	11	12
Miles of transmission lines (circuit miles)	6,377	6,702	7,195	7,348
Number of substations	158	174	178	185
Transformer capacity (kilovolt-amperes)	6,153,000	7,337,000	8,113,000	10,770,000

Fiscal year 1957 estimates for power contract and billing work are essentially the same as for 1956.

The fiscal year 1957 estimates for general administrative activities, which include personnel, administrative services, procurement, accounting and budget work, are slightly higher than the previous year. Staffing for these activities in fiscal year 1957 is held at the same level as the previous year, but the operation and maintenance appropriation requirement is increased since the staff will devote a higher proportion of its time to operation and maintenance and less to construction.

Power situation

Last year.—Streamflow conditions of major power streams in the Pacific Northwest were quite favorable during the 1954–55 operating year. The Administration supplied all requirements of the public agencies and the privately owned utilities as well as firm power under contract to industry. In addition, interruptible industrial loads were supplied except for an interval near the end of the storage drawdown season. Peaking conditions became critical at that time and part of the interruptible industrial loads could be supplied only by non-Federal resources during high-load hours until reservoirs began filling. The shortage period extended from March 21 to May 16.

Current operating year to March 1956.—Streamflow resources for the current year as of the first of March have been better than median. The Administration was able to supply the full requirements of all of its customers, including nonfirm supplies to the privately owned utilities and industries, except during the peak load hours of 2 days in mid-November when supplies for interruptible industrial loads were curtailed to the extent of 97,000 kilowatts. This curtailment resulted from a large increase in peak loads throughout the Northwest caused by abnormally cold weather, with temperature declines ranging from 26 to 41 degrees below normal. The total BPA system peak generation reached a new high on November 15, 4,362,000 kilowatts.

The extreme cold weather in November, which surpassed all records for this time of the year, caused loads of the west group of the Northwest power pool to rise to levels which substantially exceeded the forecasted winter peaks. The west group peak load including BPA loads in Montana for the week ending November 17 climbed to 6,535,000 kilowatts, which was 460,000 kilowatts, or 8 percent, above the peak forecasted for the month of November. There was not

sufficient warning to have all the steam plants in operation, but steam-electric generation ranging from 100,000 to 220,000 kilowatts was utilized during the heavy load hours. Fortunately, the cold weather occurred at a time when streamflows were relatively high and reservoirs were at or near top elevation, affording maximum system peaking capabilities.

Loads of the west group utilities continued to exceed seasonal estimates into December, dropping below the estimates by the end of the month when temperatures rose to above normal. The loads continued below the seasonal estimates until late in January when they rose sharply as temperatures again fell far below normal. The below normal temperatures continued through February and caused the west group energy loads to average about 200,000 kilowatts above seasonal estimates. New generation records were established for the Federal plants with an hourly peak generation of 4,479,000 kilowatts occurring 8–9 a. m. on February 1 and a maximum 24-hour generation of 93,740,000 kilowatt-hours on February 16. All west group loads during the month of February were served with hydrogeneration and minimum amounts of steam except during peak hours on 3 days of the month when generation from steam rose to a maximum of 136,000 kilowatts.

Current operating year, remainder of storage drawdown period, March to mid-April 1956.—With continuing better than median streamflow during the remainder of the storage drawdown period March 1 to about mid-April 1956 the Administration would be able to fully supply the firm requirement of the public agencies and the firm and nonfirm requirements of the privately owned utilities and industries. Even under adverse weather conditions all of the energy load would be met. Peaking capacity available for interruptible loads, however, is still dependent on area temperatures and resulting peak load levels.

Future years under critical hydro conditions and no additional generation.—Under critical year hydro conditions, if no additional generating plants are built other than those now under firm construction schedules, all of the firm requirements of the public agencies and industries could be met from Federal hydro resources for the years 1956–57 through 1964–65. The Administration, however, could only supply varying and insufficient amounts of power to the privately owned utilities and could meet none of its interruptible industrial load. Only about 60 percent of the requirements of the privately owned utilities could be met through 1958–59. This supply would decrease to about 25 percent by the year 1962–63 and to none in 1965–66. The energy requirements of the private utilities in addition to their own hydro resources range from about 800,000 kilowatts in 1956–57 to about 1,300,000 kilowatts in 1962–63 and 1,800,000 kilowatts in 1965–66.

The requirements by the privately owned utilities and industries which could not be supplied by the Administration could be met in part by available hydro tnd stream generation in the west group pool. Until 1958–59 only about 60,000 to 150,000 kilowatts of steam-electric generation would be required by the private utilities to meet their full requirements. By 1961–62 the use of all resources including steam-electric generation of about 400,000 kilowatts would still fall short by about 97,000 kilowatts of meeting the west group area firm requirements. Only limited amounts of steam generation would be available each year through 1960–61 to meet the interruptible industrial loads.

Future years under median hydro conditions and no additional generation.—Under median hydro conditions in 1956–57, and with no additional generation, the Administration could serve all requirements of the public and private utilities, firm industrial loads, and about 280,000 kilowatts of the 615,000 kilowatts of interruptible industrial. The remaining 335,000 kilowatts of interruptible loads could be served from non-Federal hydro and steam resources available in the pool. By 1962–63 it would be impossible to supply any appreciable portion of the interruptible industrial load from Federal hydro resources. Beginning with the year 1962–63 there would be shortages in meeting the nonfirm requirements of the privately owned utilities from Federal hydro resources.

West group area hydro resources and steam generation could almost meet all of the area's firm requirements in 1964–65. A shortage of about 400,000 kilowatts to fully meet the private utility requirements after using all available resources would occur in the year 1965–66.

Need for new resources.—Based on an area power study dated August 5, 1955, prepared by the Administration, a critical need for new resources after 1958–59 is evident. By 1961–62 under critical year hydro conditions and assuming all of the projects that are now definitely scheduled for construction will have been completed, the total west group resources at that time including all steam-electric

generation will be short 100,000 kilowatts of meeting its firm loads. No resources would be available to meet interruptible industrial loads. The projected capabilities do not include any machine outages. The load requirements are based on normal temperatures and do not provide for abnormal rises in loads because of departures in temperatures such as occurred in November of this year. These factors tend to increase the amount of shortage of capabilities to meet the area requirements and indicate the need for prompt scheduling of additional resources for production by 1961–62 or earlier, and for further additions to generating capacity to be in service in later years to supply load growth. The Administration is actively participating in the regionwide planning which must precede the scheduling of the needed additional generating capacity.

Financial position

The accounts of the commercial power operations of the Columbia River power system, which includes the Bonneville Power Administration's transmission network and the hydroelectric generating projects of the Bureau of Reclamation and the Corps of Engineers for which the Bonneville Power Administration is the marketing agent, are subject to an annual commercial-type audit by the General Accounting Office. This audit shows that the Government's power operations in the Pacific Northwest continue to be in a very sound financial position.

Revenues and expenses fiscal year 1955.—Favorable streamflows, with the exception of a short period beginning in March 1955, in the Columbia River Basin during fiscal year 1955, together with the installation of additional generating units in service at the various dams under construction, resulted in total gross operating revenues of $52,066,482.[1] This was an increase of $6,748,789, or 14.89 percent over the $45,317,693 reported for fiscal year 1954.

While gross revenues will continue to increase in subsequent years due to the additional installation of generating units, it is expected that net revenues will not be reflected by a proportionate increase due to two major factors:

1. Postponement of any increase in the Administration's wholesale power rates until December 1957, or later, and
2. The higher construction costs of new dams and powerplants being placed in service.

An additional factor which also affects current costs is the necessity of building major transmission facilities to transmit power from the new hydroelectric projects. When the first generating unit at such projects goes into service, the full capacity of the transmission investment may not be utilized until additional units are placed in service with the result that during the developmental period for a new generating plant, transmission costs will be disproportionate to actual production of revenue.

Of the $52,066,482 gross revenues of the Columbia River power system in fiscal year 1955, $13,020,810, or 25.01 percent, was applied to operating and maintenance cost; $14,516,958, or 27.88 percent, was applied to depreciation costs, and $15,937,409, or 30.61 percent, was applied to interest costs, leaving a net revenue for fiscal year 1955 of $8,591,305, or 16.5 percent.

Cumulative revenues and expenses from inception to June 30, 1955.—Total operating revenues of the commercial power operations of the Columbia River power system from inception to June 30, 1955, were $401,813,269. Of this amount $110,190,581, or 27.42 percent, was applied to operation and maintenance cost; $80,462,504 or 20.02 percent, was applied to depreciation costs, and $101,080,450, or 25.16 percent, was applied to interest costs, leaving a net revenue of $110,079,734, or 27.40 percent.

The new operating project included in the 1955 revenue and expense statements was Lookout Point-Dexter, on the Willamette River.

Capital investment of the United States Government and status of repayment as of June 30, 1955.—Total capital investment of the United States Government in the commercial power components of the operating projects only as of June 30, 1955, amounted to $1,123,063,162. This is shown on the tables below. The amount of this power capital investment repaid as of June 30, 1955, was $192,188,387, or 17.11 percent. After the application of this repayment the net power capital investment in these operating projects as of June 30, 1955, amounted to $930,874,775. In addition to the above repayment of capital, operating and

[1] These are the combined revenues of the Columbia River power system and include amounts totaling $88,427 collected directly at the generating plants as well as those collected by the Bonneville Power Administration.

maintenance expenses in the amount of $96,772,126, and interest expense of $101,080,450 have been repaid to June 30, 1955. The operating, maintenance, and interest expenses are repaid annually.

Rate schedule.—The Bonneville Power Administration has not made any major revisions in its rate schedules for a number of years. A study made by Ford, Bacon & Davis, Inc., dated November 1, 1955, contains a number of recommendations for revisions. The Administration has not as yet completed its analysis of the report and is therefore not in a position to make a definite statement as to the possible effect that these recommended revisions would have upon the revenues of the Columbia River power system.

Columbia River Power System

Summary of Federal investment in the operating power projects and repayment as of June 30, 1955

	Gross investment	Repayments	Net investment
Investment in current expense:			
Operation, maintenance, etc	$96, 772, 126	$96, 772, 126	0
Interest [1]	101, 080, 450	101, 080, 450	0
Total, current expenses	197, 852, 576	197, 852, 576	0
Capital investment:			
Invested capital [2]	1, 123, 063, 162	192, 188, 387	$930, 874, 775
Unexpended (uninvested) appropriations	47, 879, 481		47, 879, 481
Gross capital investment	1, 170, 942, 643	192, 188, 387	978, 754, 256
Total Federal investment	1, 368, 795, 219	390, 040, 963	978, 754, 256

[1] The Columbia River power system does not receive appropriations for payment of interest, but imputes and includes in its accounts provisions for interest expense and returns receipts to the Treasury as repayment of such expense.

[2] Includes interest during construction of $47,073,402, which will be repaid to the Treasury as part of the capital cost of electric plant, and $15,039,591 of interest charged to future downstream regulation recoverable from operations of future downstream hydroelectric plants.

Return of power capital investment by individual projects (operating projects only) as of June 30, 1955

Project	Power capital investment [1]	Repaid as of June 30 1955	Percent repaid	Net power investment [1]
Bonneville Power Administration	$383, 200, 518	$94, 849, 512	24. 75	$288, 351, 006
Bonneville Dam project	59, 812, 351	22, 991, 224	38. 44	36, 821, 127
Columbia Basin project	221, 573, 779	58, 802, 897	26. 54	162, 770, 882
Hungry Horse project	87, 883, 133	4, 359, 403	4. 96	83. 523, 730
Albeni Falls project	29, 935, 243	549, 617	1 84	29, 385, 626
McNary Dam project	257, 870, 656	8, 797, 362	3. 41	249, 073, 294
Detroit-Big Cliff project	41, 644, 652	1, 431, 187	3. 44	40, 213, 465
Lookout Point-Dexter project	41, 142, 830	407, 185	. 99	40, 735, 645
Total	1, 123, 063, 162	192, 188, 387	17. 11	930, 874, 775

[1] Exclusive of unexpended funds in U. S. Treasury.

Mr. Rabaut. I believe you have a statement, Mr. Pearl, and I wondered if you wanted to put it in the record and talk about it?

Mr. Pearl. Yes. I would like to do that.

General Statement of Administrator

Mr. Rabaut. All right. Without objection, we will put Mr. Pearl's statement in the record.

(Statement referred to follows:)

Statement of William A. Pearl, Administrator, Bonneville Power Administration

Mr. Chairman and members of the committee, thank you for the privilege of discussing with you the plans and appropriation requirements of the Bonneville Power Administration for fiscal year 1957.

The significance of the Bonneville Power Administration's budget rests upon our position as the major wholesaler of electric power in the four-State Pacific Northwest region (Oregon, Washington, northern Idaho, and Montana west of the Continental Divide). In fiscal year 1957, the Federal power generating plants for which we are marketing agent will provide about 65 percent of the total generating capacity within this region, and over our grid system will be transmitted to wholesale load centers about 67 percent of the total energy produced. This places upon us a real responsibility to complete our new construction on the schedules we have agreed upon with our customers, for their plans are geared to ours. We also have a real responsibility to render efficient and adequate service, since the quality of our service affects the quality of electric service in the entire region. Our budget request, which we are explaining today, is merely a summary of our plans for supplying Federal power at wholesale in the Pacific Northwest.

Our program falls into two parts, "Construction and operation" and "Maintenance." Construction funds in the amount of $18.7 million are needed in fiscal year 1957. These funds are required for two purposes: (1) To provide the new electrical and ancillary facilities which we must have to transmit to major centers the power production of the new generating plants which are now under construction, and (2) to provide increased delivery capacity at local points of supply to our customers.

Under "Operations and maintenance" are grouped our fund requirements for the management of our system, and for operating and maintaining it. For these purposes we will need $7.4 million in fiscal year 1957.

Our requirements for new appropriations for fiscal year 1957 are compared with appropriations granted for fiscal year 1956 in the following table:

	Fiscal year 1956 appropriations	Fiscal year 1957 request	Appropriation increase
Construction	$14,600,000	$18,700,000	$4,100,000
Operation and maintenance	[1] 6,800,000	7,400,000	600,000
Total	21,400,000	26,100,000	4,700,000

[1] Includes $200,000 as the estimated costs of annual employee pay increase, as shown in the Administration's budget document. On the basis of ½ year's actual experience in 1956, this amount has been reduced to $187,500, for which a supplemental appropriation is requested.

Although, as shown in the above table, our appropriation requirements are greater in 1957 than in the previous year, this does not mean an increase in our total annual program. Our 1957 program actually is $700,000 less than in 1956. This results from the availability of almost $9.6 million in carryover construction funds to supplement current appropriations in 1956, while in 1957 available

carryover construction funds will be reduced to $4.4 million. Total programs for the 2 years are compared below:

	Fiscal year 1956 program	Fiscal year 1957 program	Program increase or (decrease)
Construction program:			
New appropriations	$14,600,000	$18,700,000	$4,100,000
Utilization of carryover from prior fiscal years	9,599,000	4,422,000	(5,177,000)
Total, construction program	24,199,000	23,122,000	(1,077,000)
Operation and maintenance program	[1] 6,800,000	7,400,000	600,000
Reimbursements	573,000	333,000	(240,000)
Total programs	31,572,000	30,855,000	(717,000)

[1] Includes $200,000 as the estimated costs of annual employee pay increase, as shown in the Administration's budget document. On the basis of ½ year's actual experience in 1956, this amount has been reduced to $187,500, for which a supplemental appropriation is requested.

CONSTRUCTION REQUIREMENTS

In a very real sense the construction funds we are requesting are investment funds. The Federal power system of the Pacific Northwest has proved to be a very sound investment for the Government. The system has paid its way and earned a very comfortable surplus. It will continue to do so. More specifically, as of June 30, 1955, we have earned net revenues from the inception of our operations of over $110 million, after meeting full costs of operation, maintenance, interest, and depreciation. Net revenues are, of course, for the entire Federal system, generating plants as well as transmission. The repayment of the investment is well ahead of schedule.

In the 4-year period beginning with fiscal year 1957, the Federal generating capacity in service will increase from 5 million kilowatts to 7 million kilowatts. Our request for fiscal year 1957 construction funds provides for work on the transmission network and customer service additions needed to accommodate this additional generating capacity.

The construction funds totaling $23,122,000 which we have programed in fiscal year 1957 will be applied as follows:

	Amount	Percent of total
Construction in progress (transmission facilities previously approved)	$12,628,000	54.6
New construction (new transmission facilities)	10,073,000	43.6
General plant (tools and equipment)	421,000	1.8
Total	23,122,000	100.0

I would like to mention briefly some of the more important new projects which we are proposing. In order of budget item number these are:

Item 128: A second 150,000-kilovolt-ampere 230/115-kilovolt transformer bank at Keeler (Bethany) substation, to expand supply to the cities of Forest Grove and McMinnville, the Tillamook County People's Utility District, the West Oregon Electric Cooperative, the Portland General Electric Co., and the Pacific Power & Light Co.

Item 129: A 230-kilovolt transmission line from Round Butte to Redmond, Oreg., to transmit the output of the Portland General Electric Co.'s proposed Pelton plant to the Administration's main grid.

Item 131: A second 230-kilovolt main grid transmission line from Santiam to Alvey, to supply load growth of southwest Oregon.

Item 139: A 150,000-kilovolt-ampere, 230/115 kilovolt substation, a 23-mile, 115-kilovolt line and a switching station, in eastern Grant County, to reinforce present facilities which supply the Grant County Public Utility District and the Bureau of Reclamation in the Moses Lake area, and to interconnect with the Washington Water Power Co.

Item 144: Series capacitors in the Grand Coulee-Olympia 287-kilovolt line at the Columbia substation to increase the effective capacity of this line and eliminate overloading of the Covington-Tacoma 230-kilovolt lines.

Item 355: A 230-kilovolt transmission line from the main grid to Toledo, Oreg., and 75,000 kilovolt-amperes of transformer capacity at Toledo to supply loads in Lincoln County.

Item 635: A 45-mile, 115-kilovolt transmission line from Columbia Falls to Trego, Mont., and a 6,000-kilovolt-amphere substation at Trego, to serve the Lincoln Electric Cooperative.

Item 713: A 26-mile, 115-kilovolt transmission line from Big Eddy to DeMoss, Oreg., and a 15,000-kilovolt-ampere substation at DeMoss to serve Pacific Power & Light Co,, the Wasco Electric Cooperative, and the Columbia Basin Electric Cooperative.

Last year I was able to report to you that we had undertaken thorough reviews with our customers of all new facilities in our program. This year we have strengthened and accelerated our construction planning procedures. Each facility proposed in our budget has been the subject of a comprehensive engineering study in which concerned customers have participated jointly with us. Such joint studies have led to full agreement as to the need for the system additions proposed and as to the schedules for their construction. Construction plans of our customers, in turn, are geared to ours.

OPERATION AND MAINTENANCE REQUIREMENTS

I have pointed out that the funds we are requesting for construction will be a sound investment for the Government. I believe this is equally true of the funds we are requesting for O. and M. It is good economy properly to maintain from year to year any electrical plant. Deferred or incomplete maintenance is expensive.

I am happy to report that the recent severe rains and floods in the Pacific Northwest caused comparatively little damage to and interruption of service on transmission lines and substations of the Administration. In southwest Oregon fewer than five transmission line structures were damaged by erosion and approximately the same number of conductors broken by falling trees. Major damage, however, occurred to access roads, culverts and bridges. While this latter damage did not cause any system outages it must be repaired promptly to provide access to the system for scheduled and emergency maintenance. The severe tests to which our transmission system was subjected by the high winds, extreme rainfall and resulting floods attest to the quality of the design and construction of our system, and demonstrate the soundness of good maintenance practices.

In fiscal year 1957 the value of our plant in service will average $388 million—$3,350,700, 45.3 percent of our total O. and M. request, will be used for direct system maintenance. This represents 8.6 mills for maintenance per dollar of plant in service.

Similarly it is good economy to operate properly a system such as ours. Inadequate operations not only give rise to service problems for our customers and for the ultimate consumers whom they serve, but also cost the Government money. Faulty operations and service failures mean loss of revenue to the Government. 32.3 percent of our total O. and M. request, $2,388,700, represents costs for direct system operations (manning of substations, power scheduling and dispatching, lease of communications and electrical circuits, etc.). With estimated revenues of $68.5 million for fiscal year 1957, direct system operations will require 3.49 cents of each revenue dollar.

We have given a great deal of attention to utilizing actual cost data in arriving at our budget estimates for direct operation and maintenance. These requirements account for 77.6 percent of our total operation and maintenance budget. We have made every effort to keep the appropriation request for operation and maintenance to a level comparable to accepted utility practices, to render reliable quality of service, and to maintain the system properly. We believe that the estimate provides insurance against prolonged outages or failure of the transmission system. We have not attempted to include funds which would insure against extraordinary emergencies which cannot be foreseen.

Certain basic types of work are also an essential part of the operation of our system. These include load estimating, determining schedules and operating plans for additional generating units and reservoirs, planning with the Northwest Power Pool utilities and others with respect to future operations, engineering and design of modifications to facilities in service. These types of work will require $684,600, 9.2 percent of our total O. and M. request. The several system

operation and maintenance activities thus account for 86.8 percent of our total O. and M. request.

Power contract and rate activities which include working out plans of service with customers, contract negotiations, billing, and rate studies, will require $268,000, 3.6 percent of our total O. and M. request.

The management of our system, requirements for which are grouped under the title "general administration," accounts for 9.6 percent of our total O. and M. requirements. General administration includes my office, personnel, safety, labor relations, accounting, administrative and general services, procurement, budget, etc. We feel that the $708,000 which we are requesting is the minimum necessary for good management. We are planning no increases in staff in these activities.

Our total O. and M. request of $7.4 million represents 1.9 cents for O. and M. per dollar of plant in service, the lowest ratio of O. and M. to plant in our history.

The increase in our O. and M. requirements from 1956 to 1957 results entirely from the growth of our system. Two new generating plants and 791,900 kilowatts of additional generating capacity will be added. In addition, we are adding to the transmission system 4 substations, 776,000 kilovolt-amperes of transformer capacity, 410 structure miles of high-voltage line—about $39.7 million of plant in all.

This year we have expanded our customer-review process to cover our O. and M. program as well as construction. We have advised our customers of our proposed substation manning, of our planned frequencies of maintenance, and of other aspects of our O. and M. program, and incorporated their suggestions to the extent practicable. The comments of our customers indicate clearly that they share our belief that our practices are conservative and in line with accepted utility standards.

That, briefly, is an outline of our plans for fiscal year 1957. I will be glad to supply any further information you would like.

CURRENT POWER SITUATION

During the current operating year the Administration has been able to supply the full requirements of its customers, including nonfirm supplies to the privately owned utilities and industries, except for minor amounts. It is expected that we will be able to continue supplying all requirements for the remainder of this operating year.

Perhaps the major occurrence during the past winter is that loads were sharply over estimates. For example, the peak load of the West Group of the Northwest Power Pool climbed to 6,535,000 kilowatts in November. This was 460,000 kilowatts or 8 percent above the forecast. As a result, distrubutors have revised-load forecasts upward, with the result that the present area forecast for January 1960, the end year of the fiscal year 1957 budget period, is substantially higher than earlier estimates. The Administration's budget request for fiscal year 1957 is based upon these most recent estimates.

Thank you.

Mr. RABAUT. Do you want to say something about your statement, briefly?

Mr. PEARL. Mr. Chairman, I believe that with the use of a few charts we have I can cover our budget requirements in a shorter time and more clearly than by any other method, if that meets with your approval.

Mr. RABAUT. It meets with my approval provided it is of benefit in the point of time.

Mr. PEARL. We will proceed that way. I am sure that I can do it in a minimum length of time this way.

Mr. RABAUT. All right, proceed.

Mr. PEARL. We appreciate the courtesy you have extended us in the past and are extending now. With these charts we can cover our general budget requirements in a minimum amount of time.

DEVELOPMENT OF AMOUNT REQUESTED FOR 1957

Our appropriation statistics and our program for fiscal 1957 are shown on the chart that we have displayed here. You will notice that

the appropriations we are asking for amount to $18,700,000 for construction and $7,400,000 for operation and maintenance. This makes our total request $26,100,000. Now, that total differs from our total program in that we have a carryover and certain reimbursable activities. You will notice our program for 1957 calls for $30,855,000. The difference between our program and our appropriation request is accounted for by carryover of $4,422,000, and reimbursements of $333,000.

To compare that with last year, you will notice that our program is remaining about constant. Last year, that is fiscal 1956, our program was $31,572,434 and our appropriations amounted to $21,400,000.

So, while our appropriation request is larger this year, our actual program is a little smaller.

Mr. Chairman, would you like to have questions or shall I go on with the presentation?

Mr. RABAUT. The deduction of one figure from the other results in the $26,100,000 appropriation request; is that right?

Mr. PEARL. The appropriations we are asking for, $26,100,000, differ from program by carryover, $4,422,000 and reimbursements, $333,000.

Mr. DAVIS. Reimbursement from whom and for what?

Mr. PEARL. Reimbursements include funds we take in from various sources, such as for administrative services, and minor items of income other than revenue from sale of power.

Mr. RABAUT. Is some of it from other agencies of Government?

Mr. PEARL. Yes. About $242,000 is from other agencies.

Shall I proceed, or are there other questions?

Mr. MAGNUSON. Why do you have this $4,422,000 carryover?

Mr. PEARL. Why do we have it? It is due to changes in our program, deferrals, money that we have saved on equipment purchases and other items. If you want more detail on it I can give you a chart showing exactly where it comes from.

Mr. RABAUT. His question is very good because last year you stated you did not expect any carryover of funds from 1956 to 1957. Now you estimate carryover at $4,422,000; quite a difference.

Mr. PEARL. That is right. We were able to make reductions in our program requirements. Here is the chart showing the changes. Item 1, changes in total cost, account for 30 percent, or $1,340,000. We were able to buy transformers and other equipment cheaper than we thought we could. In other words, there was a "white sale" on.

Item 2, use of materials available from stock or system, $1,521,000. Previous to the time you design a facility you are not sure just what you are going to use, whether you will have it in stock or not. We are in the process of trying to reduce the stock that we have at Bonneville and we make use of everything we have in stock that we can.

Mr. RABAUT. What is the third item?

Mr. PEARL. Third is changes in plan, $1,615,000. That is, where we have a proposed plan, say, to increase the size of a substation and later load-growth studies indicate we do not need to do it, or where we find we can make a change somewhere else to reduce costs. Our plans are the result, of course, of making a study of load centers and load growths which we must estimate a number of years in advance; but as we get nearer to the time of actual construction we have more accurate statistics to work with. As a result of changes in plan we were able to save $1,615,000.

The next, item 4, is changes in scheduling, $497,000. By the same

token a project that appears as though it should go in this year, or require a certain expenditure this year, maybe can be put off until next year. We operate on the general theory that we do not spend the money until it is essential.

Mr. RABAUT. That is a postponement?

Mr. PEARL. Yes.

Mr. RABAUT. Five?

Mr. PEARL. Item 5 is anticipated unearmarked reductions, $322,000 as discussed on page BP23 of our budget document. Then, other small items, $113,000. When you sum these all up you arrive at a figure of $5,408,000 for program reductions.

Against these reductions we had miscellaneous unscheduled cleanup work that we did in our 1956 program, $233,000, and appropriation reductions absorbed of $753,000. These total $986,000. When this sum is deducted from our total program reductions of $5,408,000, we have a net reduction of $4,422,000, which is our carryover figure.

Mr. RABAUT. What does that mean, appropriation reductions absorbed?

Mr. PEARL. Last year Congress cut us back on the total appropriations we had requested for the year. The sum of these two program changes on the plus side, $986,000, when subtracted from our reductions, gives us a carryover. That is the route by which we arrived at the $4,422,000 carryover

Mr. MAGNUSON. Are you essentially carrying out your 1956 program?

Mr. PEARL. We are carrying out our 1956 program. We have a chart on that, I do not know whether we brought it along or not. I can show you the chart, or I can say we are carrying out the program.

Mr. MAGNUSON. I think when you say that we do not need the chart.

Mr. PEARL. The chart merely shows that we carried out the program.

Mr. KIRWAN. Proceed.

POWER SOLD

Mr. PEARL. The chart that we are now displaying shows you the percent of the energy that each one of the utilities in the Northwest power pool purchased from us last year. For the Portland General Electric Co., 61.7 percent of the energy they sold came from the Bonneville Power Administration. Pacific Power & Light, 55.5 percent; Tacoma City Light, 52.7; Seattle City Light, 21.4; Montana Power Co., 13.7; Washington Water Power Co., 11.1; Puget Sound Power & Light, 10 percent; and Idaho Power, 0.4 percent.

Mr. KIRWAN. Were they all private concerns?

Mr. PEARL. No. Tacoma and Seattle are municipalities. One statement I should add. This does not mean this is the amount they had to have to carry their load. This is the amount they elected to buy from us.

CONSTRUCTION PROGRAM

Now for our construction program: Our overall budget is divided into two parts, "Operation and maintenance," and "Construction." Our construction request consists of sufficient funds to build transmission lines and substations to carry new generation to the load

centers. We have in our area about one-half million kilowatts of new generation coming on each year for the next 4 or 5 years.

To give you the detail of just how much, we have prepared this chart. The column at the left shows the amount of generation we will have as of July 1, 1956, 4,976,600 kilowatts. We have coming on the line in fiscal year 1957, 455,400 kilowatts; in 1958, 659,400; in 1959, 512,300; and in 1960, 358,800. In other words, roughly a half million a year. These years we consider our budget period. Of course, you will notice that as of July 1, 1960, we will have 6,962,500 kilowatts. There are several units under construction that will come along later.

RATE SCHEDULE

Mr. KIRWAN. The justification states a recent study made by Ford, Bacon & Davis contains a number of recommendations for revision in the rate schedule. What can you tell us at this time of the possible effect of these recommendations on the present rate schedule?

Mr. PEARL. We announced last year that Bonneville would not increase its rates previous to December 1957. Each year we make a study to determine whether our rates are bringing in enough revenue to meet our expenses. We do not think we should try to predict further than that what our rates should be. The Ford, Bacon & Davis report is being studied by the group at Bonneville. We will complete our study in about a month. The Ford, Bacon & Davis report has been referred to the public power groups, to the private groups, and to various others for their comments.

When we have completed our study, we will make our recommendations to the Department of the Interior for their consideration.

To really answer your question, briefly I would say there will probably be some change in our rate structure. That is basically what Ford, Bacon & Davis were asked to study.

Mr. DAVIS. Who are these people that are making this report? At whose request and for what purpose? What is the background?

Mr. PEARL. It is a nationally known eastern company of engineering consultants from New York that were asked by Bonneville Power to make this study of our rate structure. It originated because of many questions being raised by people in the Northwest regarding our rate structure. We elected to bring in an outside group to make this study. Does that answer your question sufficiently?

Mr. DAVIS. Yes, it does.

Mr. HAND. To what extent are you regulated by law in fixing your rates?

Mr. PEARL. The law and payout policy stipulate our rates shall be sufficient to meet all costs required by law which consist of operation and maintenance expenses, interest on the investment allocated to power at projects from which we market the power, and repayment of the power capital investment; and operation and maintenance and amortization and interest on the transmission system for which we are responsible. And so I would say that the Bonneville Act, together with other acts, determine our rates, which are approved by the Federal Power Commission.

Mr. HAND. Congress will not let you make a profit?

Mr. PEARL. We are not supposed to make a profit.

Mr. DAVIS. Are your rates uniform throughout the area served by the Bonneville pool?

Mr. PEARL. We operate on a "postage stamp" system. That is to say, they are uniform.

Mr. DAVIS. You have a fixed rate and then that, plus wheeling charges, determines what they pay?

Mr. PEARL. We have standard rates but these apply at points of delivery at load centers, with the exception of the A–4 rate which applies at points of delivery at the generating plants, so there is no wheeling charge in our most commonly used rates. The customer can elect from four rates for power delivered at the load center. That really makes it postage stamp, you see.

Mr. HAND. Are we going to have before us just what your rates are for the record?

Mr. PEARL. Our base rate is $17.50 per kilowatt year. If you call that 2 mills it is the same thing at 100 percent load factor use. All the contracts carry in them demand clauses so that the actual average rate that the various customers pay varies. Now, we do publish in our annual report every year just what each individual customer pays, so it is a matter of public information and I would be glad to provide that for the record, if you want it in the record.

Mr. HAND. I do not want detail, but I understood you to say you had five rates.

Mr. PEARL. Yes, there are five different rates in our rate schedules approved by the Federal Power Commission, which have been used.

Mr. HAND. No trouble just to put those five rates in?

Mr. CONKLING. Each rate covers about two pages. We can supply those for the record. The five rates are: the A–4 rate schedule, the C–4 rate schedule, the E–4 rate schedule, the F–4 rate schedule, and the H–3 rate schedule. We also have another rate, R–1, on which we have no customers at present nor have we ever had any customers; it is a railroad electrification rate which has never been used. Do you wish the schedules entered in the record?

Mr. HAND. No. Those symbols you gave refer to that report?

Mr. CONKLING. Yes.

Mr. HAND. Your basic rate is 2 mills?

Mr. PEARL. That is right, at 100 percent load factor.

Mr. RABAUT. Do you want those rates in the record?

Mr. HAND. No.

Mr. RABAUT. Any more questions?

Mr. MAGNUSON. You have had this study by Ford, Bacon & Davis and you must know in general what it recommended.

Mr. PEARL. They came out with 31 specific recommendations and those recommendations we have all tabulated in a very brief form if you would like to have them or have them in the record. By the way, you realize the report was two volumes and we just broke this down into a minimum summary. For example, they recommend that we retain the postage stamp rate. They recommend we eliminate certain rates and they recommend we change certain others. They came out with 31 recommendations.

Mr. MAGNUSON. How long is that summary?

Mr. PEARL. Three or four pages here.

Mr. MAGNUSON. Mr. Chairman, I would like to have that summary placed in the record.

Mr. RABAUT. Without objection, we will put the report in the record.

(Information referred to follows:)

CONCLUSIONS AND RECOMMENDATIONS, FORD, BACON & DAVIS RATE REPORT

The report on the rate structure of the Bonneville Power Administration was made by the firm of Ford, Bacon & Davis Co., and issued under date of November 1, 1955.

The report lists 31 conclusions and recommendations appearing on pages 287 through 299 of the report. A brief résumé of each of these items follows:

(1) BPA should not increase the overall level of its present rate structure. (Specific recommended changes would reduce revenues from $800,000 to $1,200,000 per year.)

(2) The "postage-stamp" rate principle should be retained.

(3) The at-site firm power rate schedule A–4 should be withdrawn, except for continued availability to existing three customers.

(4) The special R–1 rate schedule covering power for railroad electrification should be canceled.

(5) The F–4 rate schedule should be canceled and the customers presently on this rate transferred to the E–4 or the C–4 rate schedules.

(6) The E–4 rate schedule should be made available to ultimate users without distinction (at present available to purchasers for resale, or for irrigation and drainage pumping use).

(7) The 0.4 mill per kilowatt-hour irrigation discount should be eliminated from the E–4 schedule.

(8) The 3.5 mill per kilowatt-hour ceiling rate for newly developed separate systems should be removed from the E–4 schedule.

(9) The limitation requiring payment for not less than 90 percent of power needs should be removed from the E–4 schedule.

(10) The basis on penalty for power factor in the E–4 schedule should be lowered from 95 percent to 85 percent.

(11) As an alternate to No. 10, recommendation is made that the present system of power factor penalties be eliminated from the rate schedules. In place of this, it is recommended that BPA reserve the right to install corrective equipment at the customer's expense, or require the customer to install equipment to correct undesirable power factor conditions.

(12) The computed demand principle should be eliminated, and contract demands (in kilowatts) should be substituted as the billing basis.

(13) Arrangements should be made whereby preference customers with steam electric generation may exercise their priorities in purchase of dump energy when available for steam replacement purposes.

(14) If computed demand (item 12) is eliminated, appropriate changes should be made in general rate schedule provisions.

(15) Clause entitled "Resale to other utilities" (commonly called "valley power provision") should be eliminated from the present contracts (Seattle, Tacoma, and 20-year private utility contracts).

(16) Dump power rate schedule H–3 should be reduced from 2.5 to not more than 2 mills per kilowatt-hour.

(17) The kilowatt-year type of rate schedule should be continued for high load factor industrial customers.

(18) If dump power rates are not reduced (item 16), then interruptible service to industries should be limited entirely to the C–4 schedule.

(19) Formal contracts should be entered into with large industrial customers for sale of interruptible energy when available.

(20) Exchange agreements should be entered into for supply of secondary energy for purposes of reservoir filling and holding at varying rates, depending on whether deliveries are made outside of, or during, storage drawdown period.

(21) Substitute 60-minute integrated demand intervals for present 30-minute interval.

(22) Consideration should be given to elimination of the first 5 highest demands, or averaging the first 5 highest demands for determination of maximum demand for billing purposes.

(23) Continue present contractual arrangements for abatement of charges to industrial customers during times of prolonged reduction in customers' load.

(24) Arrangements should be made with generating and industrial customers to permit averaging out, over a period of 5 years' time, of the excess cost of steam-generated energy in critical years over the average cost during years of median month streamflow, by use of exchange arrangements with BPA.

(25) Appropriate reduction should be made in rates in cases where the customer provides his own transformation equipment.
(26) No reduction should be made where a customer takes service at 115 kilowatts or 230 kilowatts rather than at a lower voltage.
(27) Continue present BPA policy of no differential in rate between sales to industries and to distributors.
(28) Discontinue present provision for 2 percent delayed payment charge on bills and adopt a penalty based on the payment of interest at a stipulated rate on the unpaid amount of the bill for such time as the bill remains unpaid.
(29) All wheeling charges should be put on a straight "per kilowatt-hour wheeled" basis.
(30) The Administration should compile data with respect to loads during week-day peak hour periods as a basis for design of new type of rate structure incorporating lower demand charges and at least two levels of energy charges, depending on whether energy is delivered inside or outside of storage control season.
(31) Recommendation that BPA devote greater effort to securing interagency agreement as to basis to be used in calculating pay-out requirements and annual costs for internal accounting purposes.

Some of the recommendations in effect concern questions of policy as contrasted with purely technical features of the rate schedules and rate provisions. Those concerning policy would appear to be substantially the following:

(1) No increase in overall rate level.
(2) Retaining postage-stamp rate principle.
(3) Canceling lower at-site rate A–4.
(12) Eliminating computed-demand basis for billing.
(15) Eliminating "valley power provision."
(16) (20) Lowering rates for certain classes of secondary power.
(24) Arrangements for sharing or averaging steam costs.
(25) (26) No high-voltage rate differential.
(27) No industrial rate differential.
(31) Interagency agreement on pay-out requirements.

Mr. MAGNUSON. If they have extra copies I would like to have one and Mr. Evins and perhaps others.

Mr. RABAUT. Do you have extra copies of the report?

Mr. PEARL. Yes.

Mr. RABAUT. Please furnish extra copies to the committee.

CONSTRUCTION

Mr. RABAUT. We will take "Construction." That is on BP–18. We will put pages BP–18 to BP–25 in the record.

(Information referred to follows:)

DEPARTMENT OF THE INTERIOR, BONNEVILLE POWER ADMINISTRATION

Construction

Appropriation Act, 1956	$14,600,000
Decreases: Construction program	14,600,000
Base, 1957	0
Increases: Construction program	18,700,000
Budget estimate, 1957	18,700,000

Analysis by activities

Activities	Appropriation	Decrease	Base, 1957	Estimate, 1957	Increases
1. Construction in progress	$7,720,000	$7,720,000	0	$8,206,000	$8,206,000
2. New construction	6,448,000	6,448,000	0	10,073,000	10,073,000
3. General plant	432,000	432,000	0	421,000	421,000
Total	14,600,000	14,600,000	0	18,700,000	18,700,000

1957 construction program summary

Item No.	Facility	Estimated cost	Obligations to June 30, 1954	Program, fiscal year 1955	Program, fiscal year 1956	Program, fiscal year 1957				Balance to complete
						Construction in progress	New construction	General plant	Total	
100	Major grid:									
108	Chief Joseph-Snohomish No. 3 and Chief Joseph-Covington No. 1	$28,642,000	$12,667,000	$6,706,000	$2,607,000	$3,413,000			$3,413,000	$3,249,000
109	Lower Olympic Peninsula service	4,429,000	1,395,000	1,197,000	1,141,000	503,000			503,000	193,000
113	Snohomish Substation additions	1,362,000	84,000		452,000	182,000	$42,000		224,000	602,000
116	The Dalles area service	6,788,000	1,503,000	788,000	2,738,000	904,000			904,000	855,000
117	McNary Substation	4,931,000	3,515,000	1,021,000	395,000					
118	McNary-Ross	13,307,000	10,281,000	1,857,000	1,169,000					
119	Southeast Portland area service	20,337,000	13,111,000	1,797,000	1,242,000	312,000			312,000	3,875,000
122	Ross-St. Johns-Keeler (Bethany)	3,196,000	1,290,000	549,000	1,133,000	224,000			224,000	
123	Upper Willamette Valley service	34,759,000	30,988,000	3,088,000	683,000					
125	Oregon City-Chemawa	1,827,000	65,000	41,000	650,000	715,000			715,000	356,000
126	Big Eddy-Keeler (Bethany)	8,529,000			158,000	290,000			290,000	8,081,000
128	Keeler (Bethany) Substation additions	1,465,000					969,000		969,000	496,000
129	Round Butte-Redmond	796,000					422,000		422,000	374,000
131	Santiam-Alvey No. 2	2,986,000					1,478,000		1,478,000	1,508,000
132	Coos Bay area service	2,811,000	683,000	873,000	796,000	325,000			325,000	134,000
134	Alvey-Reston	4,027,000	55,000		1,970,000	1,762,000			1,762,000	240,000
136	McNary-Franklin	1,908,000	449,000	489,000	544,000	370,000			370,000	56,000
137	McNary-La Grande	4,502,000	3,944,000	142,000	416,000					
139	Eastern Grant County service	2,391,000					1,400,000		1,400,000	991,000
142	Columbia Substation additions	1,560,000	920,000		230,000	410,000			410,000	
143	Spokane area service	1,491,000	871,000	161,000	390,000	69,000			69,000	
144	Columbia series capacitors	783,000					507,000		507,000	276,000
150	System reactive facilities	3,115,000	872,000	350,000	549,000	167,000	904,000		1,071,000	273,000
151	Main system neutral boosters	343,000		194,000	119,000	30,000			30,000	
	Subtotal	156,285,000	82,693,000	19,253,000	17,382,000	9,676,000	5,722,000		15,398,000	21,559,000
200	Seattle area:									
204	Upper Olympic Peninsula service	2,427,000	18,000		58,000	1,246,000			1,246,000	1,105,000
205	Snohomish Substation terminal	154,000			154,000					
209	Olympia-Aberdeen No. 2	1,097,000	45,000		97,000	504,000			504,000	451,000
215	Lewis County service	1,653,000	395,000	110,000	636,000	416,000			416,000	96,000
217	Brewster Substation additions	86,000					75,000		75,000	11,000
218	Ilwaco-Long Beach area service	711,000	154,000	113,000	409,000	34,000			34,000	1,000
219	Raymond-Aberdeen	1,168,000	1,106,000	19,000		43,000			43,000	
220	Larson Substation	245,000					124,000		124,000	121,000
222	Okanogan County	373,000	245,000	99,000	29,000					
223	Moses Lake service	238,000	86,000		129,000	23,000			23,000	
227	Frenchman Hills area service	495,000	52,000	21,000	197,000	225,000			225,000	
234	Quincy-Burke	249,000	67,000	61,000	121,000					

239	Warden substation additions	44,000	21,000		6,000	17,000			17,000	
240	Willes Corner Substation	83,000	21,000				62,000		62,000	
241	Ephrata service	228,000					155,000		155,000	73,000
299	Other transmission facilities	832,000	169,000	121,000	358,000	32,000	150,000		182,000	2,000
	Subtotal	10,083,000	2,379,000	544,000	2,194,000	2,540,000	566,000		3,106,000	1,860,000
300	Portland area:									
303	Longview Substation additions	890,000	361,000		425,000	104,000			104,000	
307	Clark County and carborundum service	812,000	466,000	85,000	80,000	24,000	145,000		169,000	12,000
312	Longview area service	944,000	852,000	12,000	31,000	49,000			49,000	
317	Camas Substation transformer No. 2	138,000					97,000		97,000	41,000
318	Keeler (Bethany)-Forest Grove No. 2	333,000			126,000	156,000			156,000	51,000
325	Tillamook service	1,861,000	720,000	786,000	312,000	43,000			43,000	
329	Oregon City Substation terminal	112,000					75,000		75,000	37,000
334	Eugene-Reedsport area service	1,706,000	1,441,000	159,000	106,000					
335	Oakridge Substation transformer addition	101,000	2,000				46,000		46,000	53,000
339	Springfield substation additions	197,000		82,000	7,000	57,000			57,000	51,000
341	McKinley-Gold Beach	2,231,000	2,147,000	55,000	29,000					
349	Boyer-Tillamook conversion	506,000	39,000				354,000		354,000	113,000
352	Reedsport sectionalizing circuit breaker	78,000					51,000		51,000	27,000
354	Fairview-Millington No. 2	814,000					232,000		232,000	582,000
355	Toledo area service	3,217,000	72,000				601,000		601,000	2,544,000
361	Salem alumina transformer replacement	55,000					40,000		40,000	15,000
368	Reedsport substation additions	152,000					83,000		83,000	69,000
399	Other transmission facilities	1,111,000	151,000	145,000	505,000	107,000	175,000		282,000	28,000
	Subtotal	15,258,000	6,251,000	1,324,000	1,621,000	540,000	1,899,000		2,439,000	3,623,000
600	Spokane area—Upper portion:									
621	Creston transformer replacement	32,000	22,000		10,000					
627	Clarkston substation	94,000	17,000				77,000		77,000	
628	Bonners Ferry sectionalizing circuit breaker	80,000					80,000		80,000	
629	Valley Way substation additions	96,000	58,000	10,000	28,000					
631	Four Lakes substation transformer addition	101,000					70,000		70,000	31,000
635	Columbia Falls-Trego	954,000					613,000		613,000	341,000
637	Kalispell substation additions	174,000	3,000		86,000	85,000			85,000	
699	Other transmission facilities	258,000	9,000	6,000	157,000	13,000	73,000		86,000	
	Subtotal	1,789,000	109,000	16,000	281,000	98,000	913,000		1,011,000	372,000
700	Spokane area—Lower portion:									
701	Midway substation additions	1,970,000	1,744,000	169,000	57,000					
702	Grandview substation additions	243,000	93,000	29,000	113,000	8,000			8,000	
703	Highlands transformer replacement	99,000	70,000		29,000					
710	Franklin transformer replacement	111,000	9,000	57,000	35,000	10,000			10,000	
712	Grandview substation transformer replacement	55,000	39,000				16,000		16,000	
713	Big Eddy-DeMoss	892,000					455,000		455,000	437,000
714	Prosser substation transformer addition	98,000					46,000		46,000	52,000
715	Ringold transformer replacement	104,000			73,000	31,000			31,000	

1957 construction program summary—Continued

Item No.	Facility	Estimated cost	Obligations to June 30, 1954	Program, fiscal year 1955	Program, fiscal year 1956	Program, fiscal year 1957				Balance to complete
						Construction in progress	New construction	General plant	Total	
	Spokane area—Lower portion—Continued									
716	Goldendale substation additions	$158,000	$42,000	$9,000	$42,000	$65,000			$65,000	
717	Hedges substation	210,000					$133,000		133,000	$77,000
718	McNary-Richland direct-line completion	106,000					45,000		45,000	61,000
799	Other transmission facilities	551,000	139,000	28,000	237,000	68,000	79,000		147,000	
	Subtotal	4,597,000	2,136,000	292,000	586,000	182,000	774,000		956,000	627,000
800	General-system facilities:									
810	General structures and improvements	1,184,000	11,000	190,000	605,000	97,000	76,000		173,000	205,000
820	Communications facilities	2,234,000	403,000	646,000	741,000	248,000	48,000		296,000	148,000
830	Tools and equipment	1,570,000		669,000	480,000			$421,000	421,000	
840	Preliminary engineering studies	150,000			75,000		75,000		75,000	
850	Portland operations facilities	1,531,000	1,202,000	296,000	33,000					
860	Portable emergency transformers	527,000		217,000	290,000	20,000			20,000	
	Subtotal	7,196,000	1,616,000	2,018,000	2,224,000	365,000	199,000	421,000	985,000	353,000
	Miscellaneous cleanup work	233,000			233,000					
	Subtotal, construction program	195,441,000	95,184,000	23,447,000	24,521,000	13,401,000	10,073,000	421,000	23,895,000	28,394,000
	Fiscal year 1955 obligations chargeable to items terminated in fiscal year 1955 and therefore not in the 1956 or 1957 program			1,583,000						
	Less use of material anticipated to be available from system, and anticipated savings and deferral				−322,000	−773,000			−773,000	
	Total, construction program		95,184,000	25,030,000	24,199,000	12,628,000	10,073,000	421,000	23,122,000	28,394,000
	Utilization of carryover from prior fiscal years		14,857,000	−836,000	−9,599,000	−4,422,000			−4,422,000	
	Appropriation or estimate		110,041,000	24,194,000	14,600,000	8,206,000	10,073,000	421,000	18,700,000	28,394,000

Construction Justification

The appropriation estimate for fiscal year 1957 is $18,700,000, an increase of $4,100,000 over the amount appropriated for the fiscal year 1956. While this is an increase in appropriation requirements it does not represent an increase in the fiscal year 1957 construction program which is $3,877,000 less than for the fiscal year 1956. This results from the availability of prior years funds which reduced new construction appropriation needs as previously mentioned in the general statement.

The construction program for fiscal year 1957 provides for the initiation of new major grid facilities which must be in service by January 1960. This allows approximately 3½ years to bring them to completion, the period needed for construction of major transmission projects under existing conditions. The program also provides for facilities of lesser scope on shorter construction schedules reflecting current experience. Plans for all electrical facilities are related to projected load conditions and match generation schedules of the Bureau of Reclamation and the Corps of Engineers.

At the end of fiscal year 1955 there were 6,702 circuit miles of transmission lines in service. Work underway and new facilities proposed in this budget will add 1,364 miles of line. Thus by January 1960 the transmission system will encompass 8,066 circuit miles of transmission lines.

The scheduled increase in power production of 963,000 kilowatts of prime power between 1955–56 and 1959–60 will be sold principally to distributing utilities, publicly and privately owned. Most of this electric energy will be consumed by residential and farm customers. General industrial expansion to be supplied by the Bonneville Power Administration, based upon contracts for firm power executed or agreed to some time ago, is limited to three operations, a ferronickel plant near Riddle, Oreg. which commenced production during 1954 and will reach maximum production in March 1956; an aluminum plant at Columbia Falls, Mont., which started operation in August 1955 and is now taking its full firm requirements; and a new aluminum reduction mill at The Dalles, which is under construction and is scheduled to be in full operation early in 1958. In addition the Hanford Engineering Works of the Atomic Energy Commission, also supplied by the Administration, is expanding.

BASIS FOR COST ESTIMATES

Estimates for the fiscal year 1957 construction program were prepared using cost levels of the period January to July 1955. It is expected that material costs will, in general, increase slightly over the next 18 months but that labor costs will remain at the present level.

CUSTOMER SERVICE ITEMS

All proposed customer service budget items have been developed jointly by the staffs of the Bonneville Power Administration and its customers. These items represent the part of the total new facilities, shown to be needed by joint Administration-customer studies, which it is the Administration's responsibility to provide under its customer service policy. Construction by customers of related new subtransmission and distribution facilities necessary to carry the power from Administration points of delivery to ultimate consumers has been agreed upon and scheduled in conjunction with the joint studies. Energization dates proposed for Administration facilities match these customers' schedules for construction of their own facilities.

Also, all proposed items meet, and in most cases materially exceed, the Administration's standards of minimum feasibility. That is, cumulative revenues from the sale of power through the new facilities during the initial 10-year period of service are estimated to be sufficient to cover total annual costs of the specific facilities, and, in addition, to contribute to the costs of generation and main grid transmission.

USE OF MATERIAL ANTICIPATED TO BE AVAILABLE FROM SYSTEM, AND ANTICIPATED SAVINGS AND DEFERRALS

A sum of $773,000 is deducted from the fiscal year 1957 construction program requirements on the basis of a reasonable expectancy that (1) materials may be available for application to the program from returns from completed projects where contingency quantities have not been needed in full, (2) the summation of

bid prices for construction contracts may be lower than estimates, (3) plans may be revised to eliminate features of projects and (4) changes in customer requirements and power flows may permit deferral of some projects. These anticipated reductions cannot at this time, of course, be earmarked to specific budget items. For the remainder of the fiscal year 1956 a corresponding reduction of $322,000 has been made.

Major grid

The major grid facilities included in the Administration's fiscal year 1957 construction request result from detailed engineering and analyzer board studies of the combined transmission systems of the region, made in cooperation with the major electric utilities. Schedules of generator installations of the Corps of Engineers and the Bureau of Reclamation, as well as schedules for new non-Federal projects which are reasonably assured, form the generation base for these studies. Agreed-upon load estimates and power flows, developed by or in cooperation with the utility distributors of the region, form the load base.

The proposed system additions provide the most economical means by which power flows may be carried by the Bonneville grid, operating integrated with the other systems of the Northwest Power Pool, and represent the most efficient means of supplying regional loads with adequate reliability. Additions to this construction program might, of course, be necessary if, prior to January 1960, additional power supplies were to be added over and above those presently included in the firm schedules, or if loads exceed estimates.

A total of 1,985,900 kilowatts of peaking capacity is scheduled to be added on the Federal system during the period covered by this proposed construction program. Of this total, 455,400 kilowatts will be added in fiscal year 1957, 659,400 kilowatts in fiscal year 1958, 512,300 kilowatts in fiscal year 1959 and 358,800 kilowatts in fiscal year 1960. This will bring to a total of 6,962,500 kilowatts the peaking generating capacity on the Federal system at the end of fiscal year 1960. The transmission system is, of course, designed to utilize fully this total generating capacity.

To achieve this utilization, the Federal transmission system, broadly speaking, must meet two requirements: (1) There must be sufficient capacity to supply maximum yearly peak loads, which generally occur in the months of December or January; and (2) there must be sufficient capacity between each generating plant and the grid to utilize the full maximum capability of the plant.

The following table shows the maximum peaking capability of each generating plant on the system before and at the close of the budget period.

Peak capacity installations

[In kilowatts]

	End of fiscal year 1956	End of fiscal year 1960	Increase
Bonneville	570,000	570,000	
Grand Coulee	2,319,000	2,319,000	
Hungry Horse	328,000	328,000	
Detroit	115,000	115,000	
McNary	966,000	1,127,000	161,000
Big Cliff	20,700	20,700	
Lookout Point	138,000	138,000	
Dexter	17,300	17,300	
Albeni Falls	49,000	49,000	
Chief Joseph	441,600	1,177,600	736,000
Chandler	12,000	12,000	
The Dalles		1,076,400	1,076,400
Roza		12,500	12,500
Total	4,976,600	6,962,500	1,985,900

Mr. RABAUT. $18,700,000 in new appropriations is requested for construction in 1957. $10,073,000 of this is for new construction. Will you identify the major new projects and give us a brief explanation of each?

Mr. PEARL. I will just go over this briefly and if you want any detail I will have our chief engineer give you the detail.

This map shows the Bonneville grid. All of the lines that are in black on this chart are lines that are now in operation. All of the lines on this chart that are in green are work that is now in progress and the lines that are in red are new starts for which we are asking funds this year. The circles, of course, are substations and the same color scheme applies to the substations. If it appears here in red it is a new substation. If it is in two colors it is a present one being enlarged and if it is green it is one now under construction.

Mr. RABAUT. Very well.

Mr. PEARL. If there is any detail you want——

Mr. RABAUT. The red ones are the new ones?

Mr. PEARL. Red ones are new starts.

Mr. RABAUT. It is for those you are asking $10,073,000?

Mr. PEARL. New starts, $10,073,000; that is correct. Work in progress, $12,628,000.

Mr. RABAUT. That is out of the remaining 18?

Mr. PEARL. I am talking really about program now.

Mr. RABAUT. Some of that is carryover?

Mr. PEARL. Yes. I am talking about program. In our program there is also $421,000 for tools and equipment.

MAJOR PROJECTS IN 1957 PROGRAM

Mr. RABAUT. Do you want to tell us a little bit about this?

Mr. PEARL. I am going to ask Mr. Starr to cover the highlights.

Mr. RABAUT. Very well.

Mr. STARR. You asked for a brief detail of the major items?

Mr. RABAUT. Yes.

Mr. STARR. Keeler substation addition is a second 250,000 kilovolt-ampere (full forced-cooled rating) transformer bank in a location near Portland, Oreg., for the service to our major customers there. There is already one transformer there of that capability which will be overloaded shortly. This is item 128.

The next is item 129, Redmond-Round Butte 230-kilovolt line, for the purpose of tying Portland General Electric Co.'s proposed Deschutes River plant to our grid in order to introduce that power into the Northwest power pool at a weak point in the system.

Mr. HAND. I would like to pause on that particular item for a moment.

What are you planning to do here?

Mr. STARR. The Portland General Electric Co. will build a length of line from the Pelton project to an interconnection with us near the Round Butte site, which is another powerplant site upstream. We will interconnect at that point and take the line to our Redmond substation where we will provide terminals to connect with our system. This area is a power-deficient area, essentially served radially by a long single circuit from Big Eddy, and the Pelton power and

energy will be injected into our system at that point and become part of the pool. It will then be wheeled, at an appropriate charge, to the Portland load center.

Mr. HAND. If you did not provide that line, do you think the Portland Co. would?

Mr. STARR. They could provide a circuit in this area or might be induced to do it. However, I am not informed of any definite alternate plan.

Mr. HAND. If you did not do it they might have to, is that not so? In order to supply their customers and make a profit which is what they are in business for?

Mr. STARR. They have not told us what their definite plan would be in the event we could not do this.

Mr. HAND. Have you negotiated with them or talked to them along this line?

Mr. STARR. Doing it independently?

Mr. HAND. Yes.

Mr. STARR. Not specifically, no; we benefit from the integration.

Mr. PEARL. I would like to add to the statement made by Mr. Starr regarding the Round Butte to Redmond line. To bring the power from the Portland General Electric Pelton project into our line at this point has a number of advantages to us. It will help with a voltage problem, stabilize power in an area served by one radial line, and postpone for a number of years the need for another line. Dollar-wise this will mean a large saving. By displacement, we will deliver power to PGE in the Portland area for which they will pay a wheeling charge. The net result is a saving for both Bonneville and PGE and eliminates duplicate facilities.

We arrived at this plan after thorough joint engineering studies between the company and ourselves.

Mr. STARR. Then the third item, 131, Santiam-Alvey No. 2 circuit, which is a second 230-kilovolt transmission line and terminals between the Santiam station, a receiving station for the line from McNary Dam, and the Alvey station. There is presently existing a 230-kilovolt line and a 115-kilovolt line to Alvey, both of which will shortly be overloaded. This second 230-kilovolt line provides additional backup and support and more economic loading of the facilities.

Item 139, eastern Grant County service, includes a new transformer substation on 1 of our Grand Coulee-midway 230-kilovolt lines and a section of 115-kilovolt line. This will be a large-sized transformer, 250,000 kilovolt-amperes full force-cooled capacity, and a short 115-kilovolt transmission line to a switching station near Moses Lake. At that point we will tie with a Washington waterpower transmission circuit and will supply Pelican Horn substation and the Grant County Public Utility District from that station.

Next major item, 144, is the Columbia series capacitor. This is a device to be located in the Grand Coulee-Olympia, 287-kilovolt transmission line, which will electrically tend to shorten the line, give it, thereby, greater capability, and force more power over this particular circuit. The altered load division will relieve the Coulee-Covington lines somewhat and will particularly relieve the lines between Covington and Tacoma, making unnecessary the early construction of a third circuit in that area.

Item 355, the Toledo area service, involves a new transmission line from the vicinity of Albany, Oreg., to Toledo. This line will be of wood-pole construction for 230-kilovolt operation eventually. Also included is a transformer bank of added capability, originally for 115-kilovolt operation, and a series capacitor in the line to provide proper load distribution. These facilities are needed because our load buildup in this area is very rapid and the only service presently available is over 1 115-kilovolt circuit which provides a rather unreliable service, not firm supply.

The Columbia Falls-Trego facility, item 635, is considered to be a customer service item and is a 115-kilovolt line from the Columbia Falls station near Kalispell, Mont., just below Hungry Horse Dam, to Trego. It will serve public agencies and will include, also, a transformer station at the Trego terminal.

Then, item 713, Big Eddy-DeMoss, another customer service facility, is a 115-kilovolt line from the Big Eddy switching and substation associated with The Dalles powerplant, to a new substation to be located at DeMoss, at which point we will transform and interconnect with 2 public agencies and the Pacific Power & Light Co.

There are 5 additional smaller main-system items and 20 additional smaller customer-service items, dealing mainly with transformer replacements and similar facilities.

Mr. MAGNUSON. What is the situation with respect to Chief Joseph-Snohomish No. 3?

Mr. STARR. You refer to the circuit we have just completed?

Mr. MAGNUSON. Yes.

Mr. STARR. That is one of the 345-kilovolt circuits. We are taking 2 345-kilovolt circuits from Chief Joseph to the Puget Sound area. One of them is now constructed and energized to operate at 230 kilovolts from Chief Joseph to the Snohomish station. The other, partially constructed, will follow much the same right-of-way for a considerable distance over Stevens Pass, and will terminate at Covington. It will operate also at 345 kilovolts.

Mr. MAGNUSON. That is in green [referring to the map]?

Mr. STARR. In green.

Mr. MAGNUSON. Does that mean under construction?

Mr. STARR. Yes; that is approved and under construction.

Mr. MAGNUSON. The line to Snohomish substation is completed?

Mr. STARR. Yes; complete and now operating at 230 kilovolts. We have not yet installed the auto-transformers to raise it to the higher voltage. They will not be needed for some time.

Mr. MAGNUSON. There is no money in this appropriation request for Chief Joseph-Covington, is there?

Mr. STARR. We are requesting $3,413,000 in fiscal year 1957 for budget item 108, which includes design and construction of the line and substation additions. Additional sums have been included in past requests.

Mr. MAGNUSON. You have all the money you need?

Mr. STARR. Funds for construction are being requested. The transformers are on order for this job.

Mr. MAGNUSON. You have all the money required to complete that job?

Mr. STARR. With this request, I believe so, sir.

MILES OF LINE IN SYSTEM

Mr. EVINS. Not as criticism, but as a matter of information for the record, could you give us the total number of miles of grid line completed in the Bonneville power system?

Mr. STARR. I will have to look that up, but we can find it very shortly.

Mr. EVINS. Approximately?

Mr. PEARL. Approximately 7,000.

Mr. EVINS. Approximately 7,000 miles completed. Approximately how many miles planned or underway?

Mr. STARR. We can make an estimate. By 1960 we will have about 7,595 structure-miles of line on our systems. This compares to the 6,730 structure-miles we will have as of July 1, 1956.

Mr. EVINS. That would be total?

Mr. STARR. Yes.

SUBSTATIONS

Mr. EVINS. Please indicate the number of substations in your system?

Mr. PEARL. We have all that on a chart here we are going to give you in just a minute.

Mr. EVINS. I am interested in securing round figures, if you could supply that for us.

Mr. PEARL. Here is the information you have just asked for. Substations in 1956, 174; in 1957, 178. These additions are in our budget request for this year.

Regarding lines, we have actually 6,320 structure-miles as of July 1, 1955. As of July 1, 1956, we will have 6,730 structure-miles. And Mr. Starr gave you the figure as of 1960.

Mr. EVINS. Now, give us again the accurate figure for the number of substations completed and the number for those planned.

Mr. PEARL. One hundred and seventy-four completed and 4 planned.

PRESENT AND ANTICIPATED POWER CAPACITY

Mr. EVINS. Can you give us now the number of kilowatt-hours of electricity marketed over your system at present and number of kilowatts anticipated or needed?

Mr. PEARL. Do you want kilowatts or kilowatt-hours?

The number of kilowatt-hours we expect to market in fiscal year 1956 is 26,700 million and the number that we expect to market in 1957 is 29,913 million.

Mr. EVINS. Thank you. I think those figures are interesting and informative and should be made part of the record.

Unless there are further questions we will turn to operations and maintenance.

(The following additional information was submitted for the record:)

PACIFIC NORTHWEST

Non-Federal generation: New installed capacity in the Northwest power pool area in years 1945–55 and under construction or programed 1956–62:

Year:	*Total kilowatts added*	Year:	*Total kilowatts added*
1945	92, 820	1952	454, 300
1946	1, 900	1953	420, 900
1947	19, 600	1954	237, 000
1948	19, 530	1955	194, 000
1949	103, 520		
1950	192, 500	Total	1, 943, 820
1951	207, 750		

Projects under construction or programed for following years:

Year:	*Total kilowatts added*	Year:	*Total kilowatts added*
1956	33, 000	1961	451, 000
1957	318, 000	1962	570, 000
1958	360, 400	1963	272, 000
1959	496, 000		
1960	600, 000	Total	3, 100, 000

The following non-Federal, publicly owned and privately owned utilities constructed projects included in the above tabulation:

City of Tacoma
City of Seattle
City of Idaho Falls
Lower Valley Power & Light
Orcas Power & Light
Bonners Ferry
City of Eugene
Chelan County PUD
Grant County PUD
Mountain States Power Co.
Idaho Power Co.
Utah Power & Light Co.
Montana Power Co.
California-Oregon Power Co.
Pacific Power & Light Co.
Puget Sound Power & Light Co.
Portland General Electric Co.
Washington Water Power Co.

Transmission facilities constructed, under construction and planned by major non-Federal utilities in Pacific Northwest:

	Structure miles
1945–55	[1] 3, 500
Under construction	349
Planned	1, 541

[1] Cost approximately $90 million.

These non-Federal utilities are: Portland General Electric Co., Puget Sound Power & Light, Washington Water Power, California-Oregon Power, Mountain States Power, Idaho Power, Utah Power & Light, City of Seattle, City of Tacoma. Facilities are 69 kilovolts, 115 kilovolts, and 230 kilovolts.

STATUS OF REPAYMENT SCHEDULE

Mr. MAGNUSON. Mr. Chairman, perhaps this would be the appropriate time to bring out this question—the status of the repayment schedule.

I believe Bonneville made a report last year outlining the status of repayment on this whole system?

Mr. PEARL. That is right.

Mr. MAGNUSON. Very briefly, what is that situation?

Mr. PEARL. We can show you that in just about one second.

(Referring to chart "Return of Power Capital Investment") The left-hand column shows the power capital investment, the next column to the right shows you the amount repaid as of June 30, 1955, the

next shows percentage repaid and the last column shows the amount yet to be paid. It varies with the different projects. We can take any one of them.

Mr. MAGNUSON. Dr. Pearl, you are saying the next figure shows you so and so. That will not mean anything in the record.

Mr. PEARL. I am sorry.

Mr. MAGNUSON. Read the amounts, please.

Mr. PEARL. I am sorry. I realize you are right.

The total power capital investment in operating projects of the Columbia River power system is $1,123,063,162. The amount that has been paid as of June 30, 1955, is $192,188,387. The percent that has been repaid is 17.11. There is still to be paid $930,874,775.

Mr. MAGNUSON. How does this compare with the schedule of repayment?

Mr. PEARL. We are ahead of schedule.

Mr. MAGNUSON. How much?

Mr. OSTRANDER. Total system is ahead of schedule by $68,144,663 as of June 30, 1955.

Mr. MAGNUSON. So, you will be well within the scheduled amortization time when you are all paid up.

Mr. PEARL. That is correct.

Mr. MAGNUSON. You will be paid up well ahead of the 50-year amortization period?

Mr. PEARL. That is not the way it is being applied. It is being applied whereby it reduces the future payments so that we expect to have it all paid up on time. There are a number of ways you could do this.

Mr. MAGNUSON. Then how did you get $68 million ahead?

Mr. PEARL. By the increased sale of interruptible power, by the reduction in the costs of these projects compared with the estimated costs, by good water conditions. You realize the last couple of years we had excellent water conditions and our power available for sale has been above what we anticipated.

Mr. MAGNUSON. You are going to have lots of water next year, too?

Mr. PEARL. We are afraid we will get it all at once and call it a flood.

Mr. EVINS. You are $68 million in advance of the scheduled time for amortization repayment, notwithstanding the approved power rates by the Federal Power Commission?

Mr. PEARL. Yes, but we are ahead for those reasons I mentioned, mainly interruptible power we have been able to sell.

Mr. MAGNUSON. Are you trying to warn us not to expect too much of you?

Mr. PEARL. I am not sure we can keep on.

OPERATION AND MAINTENANCE

Mr. EVINS. If there are no further questions we will consider needed funds for operation and maintenance.

Please turn to "Operation and maintenance," and we will place in the record BP–103 through BP–109.

(Information referred to follows:)

Department of the Interior, Bonneville Power Administration

Operation and maintenance

Appropriation act, 1956		$6,600,000
Increased in base salaries due to increased pay costs		200,000
Adjusted appropriation		6,800,000
Decreases		None
Base, 1957		6,800,000
Increases:		
System operation and maintenance	560,300	
Power contracts and rates	1,900	
General administration	37,800	
		600,000
Budget estimate, 1957		7,400,000

Analysis of adjusted appropriation—Operation and maintenance

Activity	Total available, 1956	Increase in base salaries due to increased pay costs			Adjusted appropriation
		Proposed supplemental due to pay increase	Additional allowance (+) or absorption (−) in 1957	Total	
	(1)	(2)	(3)	(4)	(5)
1. System operation and maintenance	$5,723,400	$140,300		$140,300	$5,863,700
2. Power contracts and rates	246,100	20,000		20,000	266,100
3. General administration	630,500	39,700		39,700	670,200
Total	6,600,000	200,000		200,000	6,800,000

Analysis by activities—operation and maintenance

Activities	Adjusted appropriation	Decreases	Base, 1957	Estimate, 1957	Increases	Page reference	
						Table	Justification
1. System operation and maintenance	$5,863,700		$5,863,700	$6,424,000	$560,300	BP-110	BP-110
2. Power contracts and rates	266,100		266,100	268,000	1,900		BP-127
3. General administration	670,200		670,200	708,000	37,800	BP-129	BP-129
Total	6,800,000		6,800,000	7,400,000	600,000		

Operation and maintenance program justification

For fiscal year 1957 the estimates of the Bonneville Power Administration for operation and maintenance of the transmission system, power contracts, rates, and general administration activities total $7,400,000, an increase of $600,000 over the program for fiscal year 1956. The estimates will provide for reliable operation, maintenance in accordance with good utility practice, commercial relations with customers, and effective management.

Bonneville Power Administration's fiscal year 1957 operation and maintenance request, by major activities, as compared with estimates for fiscal year 1956, is summarized below:

	Fiscal year 1956		Fiscal year 1957		Requested increases, fiscal year 1956 to fiscal year 1957		
	Estimate	Percent of total	Request	Percent of total	Amount of increase	Percent increase	Distribution of total increase
1. System operation and maintenance	$5,863,700	86.2	$6,424,000	86.8	$560,300	9.6	*Percent* 93.4
(*a*) System operations	2,165,700	31.9	2,388,700	32.3	223,000	10.3	37.2
(*b*) System maintenance	3,060,900	45.0	3,350,700	45.3	289,800	9.5	48.3
(*c*) Power resources and requirements	172,200	2.5	193,000	2.6	20,800	12.1	3.5
(*d*) General services and supervision	464,900	6.8	491,600	6.6	26,700	5.7	4.4
2. Power contracts and rates	266,100	3.9	268,000	3.6	1,900	.7	.3
3. General administration	670,200	9.9	708,000	9.6	37,800	5.6	6.3
(*a*) Administration	155,700	2.3	157,700	2.1	2,000	1.3	.3
(*b*) Personnel	69,400	1.0	74,600	1.0	5,200	7.5	.9
(*c*) Administrative services	182,900	2.7	195,500	2.7	12,600	6.9	2.1
(*d*) Fiscal services	171,300	2.5	185,800	2.5	14,500	8.5	2.4
(*e*) Budget and management	37,600	.6	40,900	.6	3,300	8.8	.6
(*f*) General services	53,300	.8	53,500	.7	200	.4	----------
Total	6,800,000	100.0	7,400,000	100.0	600,000	8.8	100.0

Fiscal year 1957

It will be noted from the above table that the bulk of the Administration's fiscal year 1957 "Operation and maintenance", 86.8 percent, is to be utilized for the direct operation and maintenance of the Government's transmission system. Another 3.6 percent is earmarked for power contract and rate work, which covers commercial activities adjunct to the sale and exchange of power. Only 9.6 percent of the Operations and maintenance dollar will be expended for general administration. This results from the Administration's continuing efforts to hold down to the absolute minimum its expenses for overhead of housekeeping types of work.

Requested increased from fiscal year 1956 reflect this same emphasis. Of the total requested increase of $600,000, $560,300, or 93.4 percent is for direct operation and maintenance. The increase for power contracts and rates has been held to a nominal $1,900, or 0.3 percent of the total increase, and for general administration to $37,800, or 6.3 percent of the total increase.

Fiscal years 1956 and 1957 compared

A comparison of the distribution of the operation and maintenance dollar by activities in fiscal years 1956 and 1957 further illustrates this emphasis. While the percentage differences are small, nevertheless they indicate that the cost trends are in the right direction. 86.8 percent of the operation and maintenance dollar will be expended for direct operation and maintenance in fiscal year 1957 as compared with 86.2 percent in fiscal year 1956. This somewhat larger share of the operation and maintenance dollar which will be devoted to direct operation and maintenance is offset by decreases in the other two activities, 3.6 percent of the fiscal year 1957 dollar being allocated to power contracts and rates as compared with 3.9 percent in fiscal year 1965, and 9.6 percent being allocated for general administration in fiscal year 1957 as compared with 9.9 percent in fiscal year 1956.

Reasons for increases

Detailed explanations for increases requested in fiscal year 1957 are given in the discussions which follow on each activity. However, it may be pointed out here that the increases are necessary basically by reason of the fact that new Government dams are coming into production in the Northwest and these new dams bring with them an increased workload for the Administration, since new lines and substations and additions to existing lines and substantions must be operated and maintained to bring to locations of delivery the added power output.

Other factors, of course, also contribute to the need for increased operating funds. As the Federal generating system grows from the basic 2-plant Bonneville-Grand Coulee combination to the 16-plant group which presently is under construction, the integration of the plants becomes more complicated and more staff attention must be devoted to assuring the greatest efficiency in the utilization of water and installed generating capacity. Similarly, for example, more staff attention must be given to power scheduling; subdispatching becomes necessary; stream-flow forecasting becomes more involved, as do problems of relaying, and line and substation operating controls.

The partnership approach to the development by non-Federal utilities of new power sources in the Northwest brings its own special workload. The Bonneville Power Administration's staff must actively assist interested groups and prospective partners in the planning and highly technical studies which must precede and accompany the construction and operation of new generating plants, for such plants will be coordinated with the Federal generating system and transmission facilities will be integrated also.

In an expanding system, it is not possible to hold general administrative work at absolutely constant levels. Small increases may be expected to be necessary to keep the adjunct services in balance with operating functions. In fiscal year 1957, however, no increases in staff for general administrative work from fiscal year 1956 are proposed. The increases in fund requirements for this activity result from the staff devoting a higher proportion of its time to operation and maintenance and less to construction.

The following table lists some general indices of the increasing magnitude of the Administration's workload:

	Fiscal year				
	Actual		Estimated		Percent increase, 1956 to 1957
	1954	1955	1956	1957	
Operating and maintenance requirements	$5,882,488	$6,216,869	$6,800,000	$7,400,000	8.82
Substations [1]	145	158	174	178	
Transformer capacity (kilovolt-ampere): [1]					
230 kilovolts and lower	5,709,000	6,153,000	6,937,000	7,713,000	11.19
230–287 kilovolts			400,000	400,000	
Transmission lines (structure miles) [1]	5,410	6,035	6,320	6,730	6.49
Electric plant in service [2]	$267,496,000	$307,476,000	$348,851,000	$388,523,000	11.37
Points of delivery [1]	295	307	330	327	
Energy sales (million kilowatt-hours)	18,764	21,823	26,700	29,913	12.03
Revenues (BPA only)	$45,216,652	$51,978,055	$60,800,000	$68,500,000	12.66
Generating plants in operation [1]	3	6	9	11	
Generating capacity (peaking kilowatts) [1]	3,053,000	3,674,700	4,184,700	4,976,600	18.92

[1] Beginning of year.
[2] Average over year.

Mr. EVINS. You are requesting $7,400,000 for operation and maintenance, an increase of $600,000 over last year. Give us a brief explanation for this increase and the necessity for it.

Mr. PEARL. This year in 1957 our request is 8.8 percent greater than our request was last year. That increase is necessary because of the growth of the physical plant that we must operate. On our previous chart we indicated we have more substations to man, more lines to maintain. The actual physical plant has grown appreciably during the last year so we need a larger staff to operate and maintain the system.

The bulk of the increase we are asking for comes in the actual operation and maintenance of the plant.

We are asking for very little increase for our power contracts and rates work, only 0.7 percent.

For our general administration work we are asking for a 5.6 percent increase for 1957 as compared with 1956. This is due largely to the natural increases in the O. and M. components of activities which are distributed between O. and M. and construction. In other words, administrative activities are prorated between O. and M. and construction and a little more is being assigned to O. and M. that was assigned last year. This does not mean an increased staffing in any of the general administrative categories. Our increases in staff are in the operation and maintenance of our larger physical plant.

Mr. EVINS. I understand there has been some resurvey of your staff needs and there has been a rather substantial reduction in your personnel requirements; is that correct?

Mr. PEARL. You are talking about 2 years ago.

Mr. EVINS. Since 2 years ago there has been an increase?

Mr. PEARL. No. Two years ago we reduced 600 in a short period.

Mr. EVINS. How many have you increased since that reduction?

Mr. PEARL. Our increase comes about by the increased physical plant. We are asking in 1957 to be permitted to hire 59 more people, of which 19 will be in the substation operators category, and 31 in the maintenance crew category. In other words, I could say 50 of our new requested positions come in what we call the "blue collar" group and 9 come in the other categories. So we are asking for permission to increase our staff next year by 59 people.

Mr. EVINS. Off the record.

(Discussion off the record.)

Mr. EVINS. Any questions?

Mr. MAGNUSON. Dr. Pearl, this amount of $7,400,000 requested for operation and maintenance, is that as much as you originally requested?

Mr. PEARL. I am not sure I know what you mean by originally requested. That is what we requested for 1957.

Mr. MAGNUSON. That is the amount in the budget, but very often do you not ask for money and it goes to the Interior Department and they pare it and the Bureau of the Budget pares it a little more?

Mr. PEARL. $7,576,500 is our original request.

Mr. MAGNUSON. You came pretty close in this case.

Mr PEARL. We feel we can justify it. The work chart that we went over rather hurriedly shows how much more power we have to sell and how many more substations and lines and various physical parts of the plant we must operate. I think we can justify it very easily.

Mr. MAGNUSON. I was not questioning that. I wanted to be sure you were getting enough. That is all.

Mr. EVINS. Mr. Davis?

Mr. DAVIS. When you referred to this situation of 2 years ago you said you reduced total personnel by about 600?

Mr. PEARL. Yes, 2 years ago a survey team was brought in. They made a study of the whole operation and made certain recommendations. As a result of their study and recommendations it was agreed that we should curtail our staff by approximately 600 people. That was done.

Mr. DAVIS. That was a factor I would assume in your getting a little ahead of schedule on repayment, is that not so?

Mr. PEARL. Yes, but a relatively small factor. It is small compared to the capital that we are amortizing. You understand when I talk about capital investment that we amortize I am talking about the dams and powerplants as well as transmission lines. So the impact of reduction in force is relatively small.

Mr. DAVIS. You told us you were about $19 million ahead?

Mr. PEARL. $68 million.

Mr. DAVIS. Well, take 600 people and that is about a quarter of a million dollars right there.

Mr. PEARL. Yes, sir. By the way, of course, of these people that we curtailed, many were working in construction, not all were operation and maintenance staff.

Mr. HAND. Did you initiate that study, Dr. Pearl?

Mr. PEARL. It was initiated by the Department of the Interior.

Mr. MAGNUSON. What study do you mean? The rate study?

Mr. HAND. Study of personnel.

Mr. PEARL. The survey team.

Mr. DAVIS. When did you become Administrator?

Mr. PEARL. January 15, 1954.

Mr. DAVIS. Had the reductions in personnel gone into effect at that time?

Mr. PEARL. No, they had not.

Mr. DAVIS. Any of your customers complain of lack of service by reason of the reductions in personnel?

Mr. PEARL. We have had no complaints to my knowledge, because of our service.

Mr. DAVIS. I would say that speaks well of your administration. I might say, too, I thought those charts were very helpful. It is easier than trying to follow it through printed pages.

Mr. PEARL. It is the quickest way to give you the most information.

Mr. EVINS. Any further questions?

Having heard the testimony of this agency—the Bonneville Power Administration—last year and this year I understand that the private-power people sometimes, if not often, see the budgets which are submitted to this committee, and they often agree with the budget submitted and you have a fine spirit of cooperation and agreement among the public-power and private-power people in that area. This is an excellent example of cooperation and service to the people in your area. This cooperation has developed a fine lot of agreement and happiness by everyone concerned.

Mr. PEARL. They all see our budget before it is presented. I do not mean our figures, but I mean our program.

Mr. EVINS. If there are no further questions, the committee will stand adjourned until 10 o'clock in the morning.

MONDAY, APRIL 30, 1956.

SOUTHEASTERN POWER ADMINISTRATION

WITNESSES

CHARLES W. LEAVY, ADMINISTRATOR
THOMAS H. WIGGLESWORTH, CHIEF, DIVISION OF POWER OPERATION
FRED G. AANDAHL, ASSISTANT SECRETARY OF THE INTERIOR

OPERATION AND MAINTENANCE

Program and financing

	1955 actual	1956 estimate	1957 estimate
Program by activities:			
1. System operation and maintenance	$56,151	$73,000	$75,000
2. Purchase of energy and wheeling charges	623,269	925,000	1,134,000
3. Power contracts and rates	79,331	86,000	89,500
4. General administration	87,058	76,000	79,500
Total obligations	845,809	1,160,000	1,378,000
Financing:			
Unobligated balance no longer available	7,979		
Appropriation (adjusted)	853,788	1,160,000	1,378,000

Obligations by objects

Object classification	1955 actual	1956 estimate	1957 estimate
Total number of permanent positions	44	39	39
Average number of all employees	37	37	38
Number of employees at end of year	33	39	39
Average salaries and grades:			
General schedule grades:			
Average salary	$5,364	$5,711	$5,856
Average grade	GS-8.0	GS-7.9	GS-8.0
Ungraded positions: Average salary	$2,712	$2,958	$2,958
01 Personal services:			
Permanent positions	$199,245	$209,000	$219,000
Regular pay above 52-week base	721	1,000	
Total personal services	199,966	210,000	219,000
02 Travel	5,478	11,500	10,500
03 Transportation of things	9		
04 Communication services	4,817	6,000	5,500
06 Printing and reproduction	432		
07 Other contractual services	626,658	929,000	1,136,000
08 Supplies and materials	2,410	3,000	4,000
09 Equipment	4,995	500	3,000
15 Taxes and assessments	1,044		
Total obligations	845,809	1,160,000	1,378,000

Budget authorizations, expenditures and balances

	1955 actual	1956 estimate	1957 estimate
BUDGET AUTHORIZATIONS AVAILABLE			
Appropriation	$1,228,000	$1,160,000	$1,378,000
Transferred to "Salaries and expenses, Office of the Solicitor, Interior" (68 Stat. 362)	−16,200		
Transferred (69 Stat. 240) to—			
"Surveys, investigations, and research, Geological Survey"	−74,238		
"Education and welfare services, Bureau of Indian Affairs"	−281,299		
"Management and protection, National Park Service"	−2,475		
Adjusted appropriation	853,788	1,160,000	1,378,000
Obligated balance brought forward	130,382	80,894	97,000
Total budget authorizations available	984,170	1,240,894	1,475,000
EXPENDITURES AND BALANCES			
Expenditures—			
Out of current authorizations	764,971	1,063,000	1,272,000
Out of prior authorizations	129,743	80,894	97,000
Total expenditures	894,714	1,143,894	1,369,000
Balance no longer available:			
Unobligated (expiring for obligation)	7,979		
Other	583		
Obligated balance carried forward	80,894	97,000	106,000
Total expenditures and balances	984,170	1,240,894	1,475,000

Mr. RABAUT. We will take up now the Southeastern Power Administration. We have with us this morning Mr. Charles Leavy, the Administrator.

We will be pleased to hear from you at this time, Mr. Leavy.

GENERAL STATEMENT

Mr. LEAVY. Mr. Chairman and gentlemen of the committee, you are of course already acquainted with the statutory authority for the Southeastern Power Administration and with the activities for which the agency is responsible. Before bringing you up to date on the developments which have taken place since our last appearance before you I might therefore only mention in passing that the agency was established a little less than 6 years ago by the Secretary of the Interior to carry out in a 10-State area of the Southeast the power disposal responsibilities which are given him by section 5 of the Flood Control Act of 1944, and to invite your attention to the map attached to your copies of this statement which shows the area and the hydroelectric projects with which we are concerned.

First of all, some changes have taken place in the status of the generating capacity at the projects for which Southeastern is marketing agent. For convenience in examining the current status of capacity installations you may wish to follow the table which is the second attachment to the statement.

You will note that there are seven projects now operating, and that capacity installations have been completed at all seven. More than 1-million kilowatts of capacity are installed.

In the budget year the complete installation at the Jim Woodruff and Buford projects will be made and the first 3 units at the Old Hickory project will be installed, so that the total of installed capacity at the end of that year will exceed 1,200,000 kilowatts.

Thereafter, in the year following the budget year, further installations at the Old Hickory and Cheatham projects will increase the capacity total to almost 1,300,000 kilowatts.

The output of the projects is being sold under 39 long-term contracts and 2 short-term, interim agreements. The entire output of the first three projects shown on the table (Wolf Creek, Center Hill, and Dale Hollow) is being sold to the Tennessee Valley Authority under a long-term contract. The Georgia Power Co. is purchasing the entire output of the Allatoona project under a long-term contract. The Appalachian Electric Power Co. is purchasing the entire output of the Philpott project under a short-term, interim agreement. Two-thirds of the output of the John H. Kerr project is being sold to the Virginia Electric & Power Co. under a long-term wheeling, firming, and sale of power contract, and to 17 rural electric cooperatives of Virginia and North Carolina. The remaining one-third is being sold under a contract executed on December 7, 1955, with Carolina Power & Light Co. and contracts executed with 16 preferred agencies in the company's service area. Part of the output of the Clark Hill project is being sold to the South Carolina Public Service Authority and the Greenwood County Electric Power Commission under long-term contracts and the remainder of the output is being sold month by month on the basis of the best price obtainable among the several agencies interconnected with the project.

The status of revenues is set forth on the table which is the third attachment to the statement. You will note that last year's actual revenues reached a total of almost $10 million. We estimate that the total of this year's revenues will be increased to over $12 million—I might state that figure may be somewhat less than $12 million in view of the low-water conditions that have prevailed at some of the projects—and that the total revenue for the budget year will be still further increased to almost $16 million.

Contracts are under negotiation for the sale of the one-half of the output of the Clark Hill project which is to be sold in the State of Georgia. It is anticipated that during the current year long-term arrangements will also be concluded for the sale of the output of the Philpott and Old Hickory projects and that negotiations will be initiated with the interested private companies and preferred agencis for the sale of the output of the Jim Woodruff project.

The budget year objectives adopted in these circumstances are as follows:

First, administration of at least 106 and possibly as many as 120 long-term contracts which are expected to be in effect at the beginning of the budget year;

Second, completion of negotiation of long-term arrangements for power from the Jim Woodruff project and negotiation of long-term arrangements for power from the Buford project, which will involve the negotiation of at least 53 additional contracts and possibly as many as 80 contracts;

Third, disposal of Cheatham power to the Tennessee Valley Authority;

Fourth, establishment of rates for the Fort Gaines and Cheatham projects and review of proposed rates for the Jim Woodruff and Buford projects to establish either a rate schedule for the Chattahoochee Basin or as alternative individual rate schedules for the Jim Woodruff, Buford, and Fort Gaines projects;

Fifth, establishment of repayment accounting for Jim Woodruff, Buford, and Old Hickory projects and of consolidated repayment accounting for all of the projects in Southeastern's area;

Sixth, determination of the technical and financial benefits available from integrated operation of the Jim Woodruff, Buford, and Fort Gaines projects and from further interchange of power between the Clark Hill and Hartwell projects with the power from the projects in Chattahoochee River Basin.

An appropriation of $1,378,000, consisting entirely of operation and maintenance funds, is requested for the activities required to prosecute these objectives. The activities are system operations and maintenance, purchase of energy and wheeling charges, power contracts and rates and general administration. The sum of $1,134,000, or over 80 percent of the total appropriation, is requested for purchase of energy and wheeling charges, to be devoted exclusively to the purchases of firming energy and the payment of wheeling fees which will occur during the budget year operation of the existing contracts with the Virginia Electric & Power Co. and Carolina Power & Light Co. The remaining $244,000 of the appropriation request will provide for the system operations and maintenance, power contracts and rates, and general administration activities comprising the direct operation and maintenance of the agency headquarters. Of this amount $75,000 is requested for system operations and maintenance, $89,500 for power contracts and rates, and $79,500 for general administration.

The budget year objectives represent a substantial increase in work over the current year. No corresponding increase in personnel is contemplated by the requested funds for the direct operation and maintenance of the agency headquarters. Rather, the $244,000 requested for this purpose provides for a continuation of the agency's working force at the current year level.

Each of the activities to be conducted for attainment of the budget year objectives consists of a set of related tasks. These are enumer-

ated and examined at length in the bound assembly of justification detail which the committee already has. A summation and highlighting of them here may provide some further illustration of the extent of the agency's budget year work.

The system operations and maintenance activity is carried out to provide for investigation of the power market; determination of alternative transmission costs; scheduling and dispatch of power generation; scheduling of storage and release of water; administration of contractual operation requirements; appraisal of proposed hydroelectric developments; and determination of methods for coordinating operation of present and proposed generating plants to obtain maximum utilization of resources. These tasks are accomplished continuously in every year. Their scope will increase in the budget year as a consequence of operational and power disposal arrangements secured in the current year.

The power contracts and rates activity is conducted to prepare for, accomplish, maintain, and review the results of power disposal arrangements. In its conduct the agency determines the production cost and selling price of the power, establishes and secures approval of rates, negotiates and administers appropriate contracts and conducts perpetual review of results. Like those of system operations and maintenance, these tasks are continuing in nature and the amount of work entailed in their accomplishment will increase in the budget year.

The general administration activity is conducted to provide executive management for the agency and to supply the agency with supporting administrative and fiscal services. Its principal tasks are (1) executive direction and control of the agency as a whole, (2) administration of personnel matters, (3) procurement of supplies, equipment and materials, and the conduct of office services, (4) maintenance of accounts which record and control the expenditure of appropriated funds in accordance with the terms of their appropriation, and (5) preparation of the annual budget estimates. The activity's extent from year to year of course results from and is proportionate to the extent of the agency's other activities.

Funds appropriated for purchase of energy and wheeling charges are used only to pay amounts charged the Government under contractual arrangements for (1) delivery of power over non-Federal systems to load centers of preferred agencies for the account of the Government and (2) purchase by the Government of energy to firm up federally generated power to the load factor required by preferred agencies. As I mentioned earlier, the appropriation requested for the activity is required solely to meet budget year obligations under the existing contracts with the Virginia Electric & Power Co. and Carolina Power & Light Co. It will accomplish service to 17 preferred agencies at 80 points of wholesale delivery in the service area of the Virginia

Co. and to 16 preferred agencies in the service area of the Carolina Co.

Nine hundred and fifty thousand dollars of the funds requested for this purpose are for payment of wheeling charges and purchase of firming energy under the Virginia Co. contract. This amount is not based on critical water-year conditions at the project. In computing the amount of the estimate for fiscal year 1957, a determination was made of the actual payments that would have occured under the Virginia Co. contract had the contract been in operation and serving the estimated 1957 requirements of the 17 cooperatives during the 39 years for which actual water records are available. The amount of the appropriation request is the average of these yearly determinations.

One hundred and eighty-four thousand dollars of the funds requested are for payment of wheeling charges under the Carolina Co. contract. This is the amount estimated to be required for this purpose during fiscal year 1957 based on average water conditions. No funds are required under this contract for the purchase of firming energy since such energy is sold by the company directly to preferred agencies.

That completes my statement, sir.

Justification of the Estimates

Mr. Rabaut. We will put pages 5 through 15 inclusive in the record at this point.

(The matter referred to follows:)

December 1955 status of generating capacity and marketing arrangements

	Kilowatts operating at December of current year	Kilowatts under construction for operation in—					Total
		Current year	Budget year	Fiscal year 1958	Fiscal year 1962	Fiscal year 1963	
Wolf Creek	270,000						270,000
Center Hill	135,000						135,000
Dale Hollow	54,600						54,600
Allatoona	74,000						74,000
Philpott	14,000						14,000
John H. Kerr	204,000						204,000
Clark Hill	280,000						280,000
Jim Woodruff			30,000				30,000
Buford			86,000				86,000
Old Hickory			75,000	25,000			100,000
Cheatham				36,000			36,000
Hartwell					198,000		198,000
Fort Gaines					32,500	97,500	130,000
Total	1,031,600		191,000	61,000	230,500	97,500	1,611,600

The power now generated at the projects is being sold under 23 long-term contracts and 2 short-term, interim agreements. The entire output of the Wolf Creek, Center Hill, and Dale Hollow projects is being sold to the Tennessee Valley Authority under a long-term contract. The Georgia Power Co. is purchasing the entire output of the Allatoona project under a long-term contract. The Appalachian Electric Power Co. is purchasing the entire output of the Philpott project under a short-term, interim agreement. Two-thirds of the output of the John H. Kerr project is being sold to the Virginia Electric & Power Co. under a long-term wheeling, firming, and sale of power contract, and to 17 rural electric cooperatives of Virginia and North Carolina under long-term contracts. The remaining one-third will be sold under a contract executed on December 7, 1955, with Carolina Power & Light Co. and contracts to be executed with 19 preferred agency applicants in the company's service area. Part of the output of the Clark Hill project is being sold to the South Carolina Public Service Authority and the Greenwood County Electric Power Commission under long-term contracts and the remainder of the output is being sold month by month on the basis of the best price obtainable among the several agencies interconnected with the project.

Contracts are under negotiation for the sale of the one-half of the output of the Clark Hill project which is to be sold in the State of Georgia. It is anticipated that during the current year long-term arrangements will also be concluded for the sale of the output of the Philpott and Old Hickory projects and that negotiations will be initiated with the interested private companies and preferred agencies for the sale of the output of the Jim Woodruff project.

Budget year objectives

The budget year objectives may be summarized as follows:

(1) Administration of at least 89 and possibly as many as 120 long-term contracts which are expected to be in effect at the beginning of the budget year;

(2) Completion of negotiation of long-term arrangements for power from the Jim Woodruff project and negotiation of long-term arrangements for power from the Buford project, which will involve the negotiation of at least 53 additional contracts and possibly as many as 80 contracts;

(3) Disposal of Cheatham power to the Tennessee Valley Authority;

(4) Establishment of rates for the Fort Gaines and Cheatham projects and review of proposed rates for the Jim Woodruff and Buford projects to establish either a rate schedule for the Chattahoochee Basin or as alternative individual rate schedules for the Jim Woodruff, Buford and Fort Gaines projects;

(5) Establishment of repayment accounting for Jim Woodruff, Buford, and Old Hickory projects and of consolidated repayment accounting for all of the projects in Southeastern's area;

(6) Determination of the technical and financial benefits available from integrated operation of the Jim Woodruff, Buford, and Fort Gaines projects and from further interchange of power between the Clark Hill and Hartwell projects with the power from the projects in Chattahoochee River Basin.

Funds required for appropriation

The agency's appropriation request consists entirely of operation and maintenance funds in the amount of $1,378,000. The funds are distributed among four activities, namely, system operation and maintenance, power contracts and rates, general administration, and purchase of energy and wheeling charges. Purchase of energy and wheeling charges is estimated to require $1,134,000. The remaining $244,000 is required for actual operation of the agency and provides for a continuation of the agency's working force at the current year level.

Status of revenues

Last year's actual revenues and the revenues which are estimated for the current year and the budget year are as follows:

Projects	Fiscal year 1955 (actual)	Fiscal year 1956 (estimated)	Fiscal year 1957 (estimated)
Wolf Creek Center Hill Dale Hollow	$3,950,000.00	$3,950,000	$3,950,000
Old Hickory			900,000
Allatoona	801,554.50	1,000,215	1,000,215
Buford			595,362
Jim Woodruff			462,000
Clark Hill	2,045,416.00	3,117,920	4,268,600
Philpott	197,561.42	219,200	217,100
John H. Kerr	2,788,572.89	3,979,278	4,547,590
Total	9,783,104.81	12,266,613	15,940,867

Disposal of Kerr project power

A contract has been executed with the Carolina Power & Light Co. to wheel power from the Kerr project to preferred customers in North Carolina. Funds are included in the estimate for 1957 for this purpose. It is anticipated that power sales contracts will be executed with preferred customers during the current fiscal year which may require additional funds for wheeling in 1956.

JUSTIFICATION

System operation and maintenance, $75,000

The estimate for this activity for fiscal year 1957 is $75,000, an increase of $2,000 over the current year.

The activity is carried out to provide schedules for the generation of power, supervision of power deliveries as required by contractual arrangements, and determination of methods of coordinating operation of present and proposed generating plants to obtain maximum utilization of resources.

Constituent tasks of the activity enumerated below are accomplished continuously in every year. Their scope will increase in the budget year as a consequence of operational and power-disposal arrangements secured in the current year.

1. *Studies of project operations, long range.*—Studies are made for the purpose of determining the amounts of power and energy available for sale, and the operations required in obtaining the maximum amounts of such power and energy. They involve consideration of the characteristics of the project, historic streamflows, effects of upstream developments, requirement for downstream river flows, and characteristics of the load to be served. Prior to the start of negotiations for sale of power from the project, an initial study is made based on anticipated upstream development at the time the project is to be completed, anticipated requirements for downstream river flows, and estimated characteristics of the load to be served. As negotiations progress and additional information is obtained as to the characteristics of the load to be served, revised studies are made to take these into account. Many such studies may be required during the negotiation of a single major contract. After the completion of the contract, changes in upstream river development and requirements for downstream river flows (or proposals for such upstream development or change in river flows) may require additional studies to take into account these revised factors.

2. *Studies of integrated project operations.*—Studies of integrated project operations are project operation studies of two or more projects to determine whether the operation of those projects should be integrated to result in a greater output from the combined operation than can be obtained from the operation of the projects individually. In addition, it involves the study of the methods of accomplishing the integrated operation through existing or potential electrical interconnections of the projects.

3. *Current determinations of power and energy available.*—In connection with the projects which are in operation it is necessary to make determinations of the energy available from time to time (normally at intervals of 1 week) to control the

current operations of the projects. These determinations are based on rule curves and other criteria developed by the project operation and integration studies previously discussed and current streamflow conditions and forecasts of streamflow conditions. This is a continuing responsibility which is affected by the complexity of the arrangements for marketing of the power, such as whether the projects are operated independently or integrated.

4. *Scheduling, storage and release of water, and delivery of power and coordination of project operations with other projects and with the operations of utilities receiving power from the projects.*—The basis for this activity is the information developed by the long-range and current studies previously discussed. It involves telephone contacts with the operators of the various utilities and the various projects and with water-control engineers in the various Corps of Engineers district and division offices to advise the utilities of the power available; to arrange for schedules of deliveries; to arrange for receipts of power from the utilities to be stored in Government reservoirs; to arrange with the project operators for delivery and receipt of the power in accordance with the schedules agreed on with the utility operators and with the water-control engineers to assure that releases for power are not inconsistent with the requirement for releases for other functions of the project such as navigation and flood control. Arrangements made by telephone are confirmed in writing and in some more difficult situations personal conferences are required.

5. *Administration of contractual operating requirements.*—This involves such activities as making arrangements with the customers and plant operators for taking equipment out of service for maintenance and inspection, classifying and recording power and energy deliveries in accordance with contracts and other commitments, and making arrangements for proper voltage levels and other conditions on the systems of the customers in order to provide good service to all customers. This is a continuing activity, the volume of which is variable but which tends to increase with an increase in the number of agencies receiving power at the project.

6. *Meter testing and maintenance.*—In order that the power and energy delivered to the customers may be accurately measured it is necessary to test all meters used in measuring deliveries of power and energy at intervals not greater than 1 year. It is necessary that a representative of the agency be present at the meter test and arrangements must be made with the corps for performing individual tests and with the customer involved so that it may be represented by a witness at the test. In connection with the meters used in measuring deliveries from the utility systems to customers of the Government, where tests are performed by the utility, the Administration receives notification of such tests and makes arrangement for the affected Government customer to be represented if he desires.

7. *Reporting.*—The Administration is required to submit to the Federal Power Commission an annual report on FPC Form No. 12 and an interim report midway of the year on FPC Form No. 12–F. The Administration also participates in reporting to the Edison Electric Institute on the power operations in the southeastern United States. Complete annual reports and abbreviated midyear reports are required for this purpose. Operation reports are submitted monthly to the Department and special reports to other agencies are required from time to time.

Power contracts and rates, $89,500

The estimate for this activity for fiscal year 1957 is $89,500, an increase of $3,500 over the current year.

The activity is conducted to prepare for, accomplish, maintain, and review the results of power-disposal arrangements. In its conduct the agency determines the production cost and the selling price of the power; identifies purchasers and delivery measures; negotiates and administers appropriate contracts; and conducts continuous review of results.

The tasks making up the activity are continuing in nature. Their number is subject to some variation from year to year according to circumstances, as is the placement of emphasis among them. Both their number and the amount of work entailed in their accomplishment will increase in the budget year.

1. *Appraisal of proposed hydroelectric developments.*—To establish financial feasibility of hydroelectric projects proposed for construction, joint appraisal is conducted at the planning stage by the field agencies of the Corps of Engineers, the Department of the Interior, and the Federal Power Commission. The appraisals employ estimated costs only, and have for a principal requirement on Southeastern the determination of whether prospective revenues are adequate to

repay estimated allocations of cost to power. The determination necessitates Southeastern's conduct of preliminary cost allocation, rate and repayment studies, the results of which are reviewed at meetings held in regular series by the three field agencies.

2. *Determination of cost allocations.*—Agreement on the formulations of cost allocation was reached among the Department of the Interior, Corps of Engineers, and Federal Power Commission during fiscal year 1954. The agreement provides criteria for a joint, field level determination of costs, cost-allocation methods, and amounts for allocation. Field agency determinations under the criteria were begun in 1954, are in progress during the current year and will be conducted during the budget year. Results of the three agencies' respective studies are reviewed and reconciled at meetings held in a regular series. Southeastern's role in the joint determinations requires accomplishment of cost allocation, rate, and repayment studies that test allocations to power against obtainable power revenue.

3. *Rate establishment and presentation for approval.*—Rate schedules are required to be drawn so as to produce revenue sufficient to pay the expenses of operation, maintenance, interest, and amortization of the investment in the projects and their related power facilities. Establishment and presentation of rates for confirmation and approval by the Federal Power Commission require the accomplishment of detailed cost allocation, rate, and repayment studies based on varying assumptions that reflect the effect of proposed rates and take into account preliminary and final cost allocations, proposed and actual contract arrangements for the sale of power, and anticipated and actual project operation and maintenance costs.

4. *Determination that revenue is adequate to repay power investment.*—Repayment schedules are prepared and maintained for each project in the course of the agency's work to appraise proposed hydroelectric developments, determine cost allocations, and present rates for approval. They are prepared at the outset on the basis of estimated project costs, and are then adjusted as actual costs are reported during construction. Once the project has been completed they are adjusted periodically to reflect actual revenues and actual costs, including operation and maintenance expenses and interest and amortization. Following the approval of rates, repayment accounts are set up and maintained for each project. The accounts are maintained to insure that the revenue required to repay the project is actually materializing according to the repayment schedule.

5. *Investigation of the market.*—Disposal of the firm power, secondary energy, nondependable capacity and dump energy components of the projects' output requires both a comprehensive knowledge of the existing needs of the market and an accurate forecast of the market's future needs. Determinations of vendibility, by reason of the several uses to which they are put, must begin well in advance of the construction of projects and must thereafter undergo continuous refinement and revision to reflect changing conditions. Preliminary determinations are needed for use during the agency's participation in interagency appraisal of proposed hydroelectric developments. Exact knowledge of the existing and prospective size and character of each public body and cooperative load in the areas surrounding projects in operation and under construction is essential to an equitable disposition of power, since these agencies are by law given a preference in the sale of power and their combined requirements far exceed the power available for disposal. Accurate information on present and future load is required in determining the quantities and kinds of power available for sale at the project, in determining whether non-Federal facilities offered for the transmission of power are available on reasonable terms, in making estimates of power revenues for fiscal and other purposes, and in determining the funds needed in the coming year for the purchase of firming energy and the payment of wheeling fees. To obtain a proper return from nondependable capacity and dump energy available at the projects it is essential to have continuous knowledge of the load and generation conditions prevailing on the systems of the major utilities comprising the market for this product.

6. *Determinations of alternative transmission costs.*—It is the policy of the Department to build and operate transmission facilities to carry power to points of wholesale delivery within economic transmission distances unless other public or private agencies have or will provide the necessary facilities upon reasonable terms—the terms generally to be such that the federally produced power will be made available to purchasers at costs not higher than would result from the construction of transmission facilities by the Federal Government. Engineering and economic studies are required to develop data upon which appropriate action under the policy may be judged by the Department.

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7. *Contract negotiation.*—Contracts are negotiated for the sale of power, the employment of non-Federal transmission facilities, and the purchase of firming energy. All three purposes may be served in one contract, as in the existing contract with the Virginia Electric & Plower Co. for the wheeling, firming and sale of Kerr project power. The larger number of contracts (for example, those with rural electric cooperatives) are for power sales only. The negotiations frequently raise complicated engineering and economic problems (particularly the negotiations with large utility systems) the resolution of which becomes for the time a major element in the workload of the agency as a whole.

8. *Administration of power sales contracts.*—Continuing service requirements begin with the initial delivery of power under each contract. Some are intermittent, such as the investigation of complaints, the negotiation of changes in the contract demand, and the establishment of new points of delivery. Others occur regularly in every month. In the latter category are power billing, collection of bill payments, and the maintenance of customer accounts. The billing routine comprises a major portion of the workload. Information recorded by meter is collected monthly and processed by calculation into data from which bills are rendered. The calculation involves determination of losses between points of delivery and points of metering check of power usage against contract provisions to determine the application of penalties, and the development of appropriate constants and correction factors in order that the power quantities for which bills are rendered may properly reflect load diversity, divisions of energy between on-peak and off-peak periods and the reactive requirements of the load. The extent of the contract administration workload in any year corresponds roughly to the number of contracts on hand.

9. *Reporting.*—Monthly and annual summaries of power marketing information are required for the orderly conduct of the activity. Periodic reports are required by the Federal Power Commission (FPC Form No. 1). Establishment of repayment accounting, the larger number of contracts for administration, and other such factors, will increase the amount of work required in the preparation of reports, although the reports will not increase in number over the current year.

Purchase of energy and wheeling charges, $1,134,000.

The estimate for this activity for fiscal year 1957 is $1,134,000, an increase of $209,000 over the current year. $184,000 of the increase is due to the execution of a wheeling contract with Carolina Power & Light Co.

Funds appropriated for the activity are used only to pay amounts charged the Government under contractual arrangements for (1) delivery of power over non-Federal systems to load centers of power purchasers for the account of the Government, and (2) purchase by the Government of energy to firm up Federally generated power to the load factor required by power purchasers. The fiscal year 1957 appropriation requested for the activity provides solely for such payments under the existing contracts with the Virginia Electric & Power Co. (Vepco) and Carolina Power & Light Co. (C. P. & L.).

$950,000 of the funds requested are for payment of wheeling charges and purchase of firming energy under the Virginia Electric & Power Co. contract. This will accomplish service to 17 rural electric cooperatives at approximately 80 points of wholesale delivery located within a 150-mile radius of the John H. Kerr project. The amount is not based on critical water year conditions at the project, but instead on an average condition. In arriving at the amount of the estimate for fiscal year 1957, a determination was made of the actual payments that would have occurred under the Vepco contract had the contract been in operation and serving the estimated 1957 requirements of the 17 cooperatives during 22 years for which actual water records are available. The amount of the appropriation request is the average of these yearly determinations. The 17 cooperatives are estimated to require 275,251,700 kilowatt-hours of energy including transmission losses in fiscal year 1957, divided into 185,634,500 kilowatt-hours of on-peak energy. It is estimated that 133,846,600 kilowatt-hours of the energy will be wheeled within zone 1 and 130,818,500 kilowatt-hours within zone 2. The application of these requirements to 22 years of record at the project to arrive at the appropriation request for fiscal year 1957 is shown on the following page.

$184,000 of the funds requested are for payment of wheeling charges under the Carolina Power & Light Co. contract. This is the amount estimated to be required for this purpose during fiscal year 1957 based on average water conditions. No funds are required under this contract for the purchase of firming energy since such energy is sold by the company directly to preferred agencies.

Estimate of firming energy purchases and wheeling charges, John H. Kerr project, Virginia Electric & Power Co. contract, fiscal year 1957—Dollar requirements based on monthly application of contract provisions throughout 22-year period of complete water records

NOTES

(1) The fiscal year 1957 capacity and energy requirements of the 17 Government customers served under the wheeling and firming contract with VEPCO have been applied to each month of 22 fiscal years for which complete water records at the Kerr project are available to determine the actual wheeling and firming charges that would have occurred in those years if the VEPCO contract had been in operation and the load forecast for fiscal year 1957 for the Government's customers actually prevailed.

(2) For all years, the wheeling charges remain constant:

Zone 1 deliveries of 133,846,600 kilowatt-hours at $0.001	$133,846.60
Zone 2 deliveries of 130,818,500 kilowatt-hours at $0.00175	228,932.38
Total deliveries of 264,665,100 kilowatt-hours	362,778.98

(3) For all years, the purchase of off-peak firming energy remains constant: Off-peak purchases of 89,617,200 kilowatt-hours at $0.0038 — 340,545.36

(4) Thus, for all years, wheeling charges and off-peak purchases will amount to a constant figure of — 703,324.34

(5) The variable in the estimate is the amount required for on-peak purchases of energy. Depending on the quantity of water available in each month of each year, the on-peak purchases (at $0.0053 per kilowatt hour), and consequently the total firming and wheeling charges, vary as shown in table I opposite these notes. The average on-peak firming costs from this tabulation is: On-peak purchases of 46,304,000 kilowatt hours at $0.0053 — 245,411.13

(6) The average cost of firming and wheeling expenses is thereby estimated to be — 948,735.47

(7) In a critical water year this would be sufficient money to pay firming and wheeling charges through February as shown in table II opposite these notes.

(8) Sources of data and assumptions used in the estimate are:

(*a*) Basic water data for each month of the 22-years used is from Dependable Capacity and Energy Studies, John H. Kerr Project, SEPA Division of Operations, December 1953. Dependable capacity of 179,500 kilowatts at 1,180 hours use per year based on assumptions that the project will be electrically integrated with Philpott project and that Roanoke Rapids project will be in operation.

(*b*) Basic load data of Government customers is from individual load forecasts by months for fiscal year 1957 for 17 cooperatives served under the wheeling and firming contract.

(*c*) Diversity factors used: 0.975 for November and January; 0.97 for October and February; 0.965 for December; 0.95 for March, April, and September; 0.94 for May and August; 0.93 for June and July.

(*d*) Energy divided between on- and off-peak on the basis of studies of past experiences for each month of the year.

TABLE I.—*Year-by-year firming and wheeling costs*

Fiscal year	On-peak kilowatt-hours	On-peak dollars	Total wheeling and firming cost
1931	115,111,400	$610,090.42	$1,313,414.76
1932	76,983,800	408,014.14	1,111,338.48
1933	38,276,300	202,864.39	906,188.73
1934	83,579,500	442,971.35	1,146,295.69
1935	32,838,900	174,046.17	877,370.51
1936	37,249,100	197,420.23	900,744.57
1937	43,850,400	232,407.12	935,731.46
1938	24,832,300	131,611.19	834,935.53
1939	21,703,400	115,028.02	818,352.36
1940	50,890,800	269,721.24	973,045.58
1941	54,299,400	287,786.82	991,111.16
1942	85,482,400	453,056.72	1,156,381.06
1943	13,956,200	73,967.86	777,292.20
1944	62,453,900	331,005.67	1,034,330.01
1945	39,697,900	210,398.87	913,723.21
1946	23,507,800	124,591.34	827,915.68
1947	62,651,700	332,054.01	1,035,378.35
1948	24,888,600	131,909.58	835,233.92
1949	12,641,100	66,997.83	770,322.17
1950	22,795,300	120,815.09	824,139.43
1951	35,976,800	190,677.04	894,001.38
1952	55,020,700	291,609.71	994,934.05
Average	46,304,000	245,411.13	948,735.47

TABLE II.—*Critical year costs, monthly and cumulatively*

Month	Wheeling	Off-peak firming	On-peak firming	Month's total	Cumulative
July	$32,743.80	$32,415.52	$57,173.75	$122,333.07	$122,333.07
August	32,422.98	28,187.26	53,271.89	113,882.13	236,215.20
September	28,220.90	29,424.92	36,880.05	94,525.87	330,741.07
October	32,535.55	29,786.30	60,454.45	122,776.30	453,517.37
November	29,359.47	27,850.96	50,416.78	107,627.21	561,144.58
December	28,231.10	26,688.16	41,828.66	96,747.92	657,892.50
January	33,483.65	31,708.34	55,806.88	120,998.87	778,891.37
February	27,453.65	24,474.66	49,044.08	100,972.39	879,863.76
March	28,372.50	25,307.62	51,866.86	105,546.98	985,410.74
April	31,279.18	29,530.94	60,656.38	121,466.50	1,106,877.24
May	30,303.50	29,339.04	52,262.77	111,905.31	1,218,782.55
June	28,372.70	25,831.64	40,427.87	94,632.21	1,313,414.76
Total	362,778.98	340,545.36	610,090.42	1,313,414.76	1,313,414.76

Southeastern Power Administration, Division of Power Sales, May 12, 1955.

General administration, $79,500

The estimate for this activity for fiscal year 1957 is $79,500, an increase of $3,500 over the current year.

The activity is conducted to provide executive management for the agency and to supply the agency with supporting administrative services. Its extent from year to year results from and is proportionate to the extent of the agency's other activities. It consists principally of the following tasks:

1. *Management.*—The agency's program is determined by secretarial criteria. Coordination of the agency's activities and their executive direction and control is secured by staff conference, written directives, and a systematic review of transactions in progress. The effectiveness of procedures, methods, and routines is subjected to regular appraisal.

2. *Personnel.*—Actions are taken, records are maintained, and reports are forwarded to accomplish recruitment, separation from the service, job classification, promotion, efficiency rating, retirement, and the like, under procedures required by the Department, the Civil Service Commission, and the Congress.

3. *Procurement and office services.*—Materials, equipment, supplies, and services are purchased, records and reference materials are managed, mail is processed and handled, duplicating equipment is operated, motor vehicles and headquarters premises are maintained, staff transportation is secured, switchboard communi-

cation is operated, space is managed, and other work of a similar nature is performed to support the operation of the agency.

4. *Fiscal services.*—Accounts are established and maintained to record and control the expenditure of appropriated funds in accordance with the terms of their appropriation. Periodic and special reports on the status of accounts are prepared and forwarded as prescribed by the Department, the General Accounting Office, and others.

5. *Budget.*—In each year, program criteria established for the coming year are reflected into an estimate of appropriations required. Departmental review of the estimate is secured, and presentations for justification are made to the Bureau of the Budget and to the Congress in accordance with their respective procedures.

PURCHASE OF ENERGY AND WHEELING FEES

Mr. RABAUT. The only change of consequence proposed in the 1957 budget is an increase of $209,000 in the purchase of energy and wheeling charges. What is the explanation for that?

Mr. LEAVY. That increase results primarily from the execution of a wheeling contract with the Carolina Power & Light Co. All but $25,000 of the increase is attributable to that new contract. There is also an increase of $25,000 in the funds required under the VEPCO contract, due to some increase of loads being served under that contract.

Mr. RABAUT. That takes care of the whole amount?

Mr. LEAVY. That takes care of the increase in the wheeling and firming funds.

GEORGIA POWER COMPANY CONTRACT

Mr. RABAUT. Probably the No. 1 problem for the past several months has been negotiations for distribution of power in Georgia. What is the current status of the negotiations with the Georgia Power Co.?

Mr. LEAVY. I met last Thursday and Friday with representatives of the 37 cooperatives and the 44 municipalities in the State, and with the representatives of the Georgia Power Co. It is my belief that the contracts for disposition of power from the Clark Hill project allocated to Georgia will probably be executed in the next several weeks.

In order to give you a little better picture, I might indicate what has transpired so that you need not rely wholly on my judgment of what may be expected to happen.

Several months ago, the Department and Southeastern proposed an arrangement which involved a contract between the Government and the company, and contracts between the Government and the preferred agencies. The preferred agencies accepted that arrangement subject, however, to several major modifications upon which they insisted. Subsequent negotiations with them resulted in an agreement that certain of those conditions would be met by the Government and that certain of the conditions would not be insisted upon by the preferred agencies.

So at that point, several weeks ago, we were in substantial agreement with the preferred agencies as to the general arrangement. We had not agreed with them on the other documents which are involved in the arrangement.

There are two contracts between the preferred agencies and the company which represent a portion of the overall arrangement to

which they must also agree. Since that time, we have been working with the representatives of the preferred agencies and have worked out with their engineering representatives, I think I can say, the final language on the four documents involved. It is my understanding that these representatives will, at meetings to be held early next week, recommend to the governing bodies of these groups that they accept the arrangement as proposed.

In the event they do accept the arrangement as proposed, it will then be submitted to the Georgia Power Co. as an arrangement which has been agreed to by the Government and the preferred agencies, and will then be submitted to the board of directors of that company.

Mr. RABAUT. How numerous were these differences?

Mr. LEAVY. There were primarily three differences. The questions involved were the amount of energy which the preference customers would get, the rate at which they would get it, and the term of the contract. There was also a technical problem, involving the way in which they would be billed under the various contracts. The result of the compromise that we have reached is that the preferred agencies have dropped their insistence on a somewhat greater amount of energy to be given them and they have dropped the question that was raised in connection with billing problem. The Government has agreed to supply power at the rate which the preferred agencies suggested and insisted upon, and has agreed to go along with their views as to the length of the term of the contract. It is their desire that the contract be a 10-year contract, rather than some longer term.

Mr. RABAUT. Is the rate a normal rate?

Mr. LEAVY. Yes; I think it is in line with rates in the area. I think it is a very good rate for the preferred agencies, but it is a proper rate in view of the economics of the project.

Mr. RABAUT. What is the rate?

Mr. LEAVY. The rate will be 6 mills per kilowatt-hour. The preferred agencies are presently paying an average of approximately 6.7 mills under their contract with the company.

CONTRACT PROVISIONS

Mr. RABAUT. In what way will the contract likely vary from the standard type of wheeling contract, such as the one with the Virginia Electric & Power Co.?

Mr. LEAVY. The major matter in which it will differ from the Virginia contract is the difference which is also found in the Carolina Power & Light Co. contract. Under the Virginia contract, the firming energy which is required is purchased directly by the Government from the company and resold to the preferred agencies along with the project power that may be available. In the Carolina contract and under the proposed Georgia contract this firming energy is sold directly by the company to the preferred customers. However, under the terms of the contracts the firming energy is sold at the same energy rate that the preferred agencies pay the Government for Government energy. The end result to the preferred agencies, so far as the rates they pay, is precisely the same as in the Virginia situation.

Mr. RABAUT. Apparently in the case of your contract with the Virginia and the Carolina Power & Light Co., you do not purchase

firming energy needed by preference customers. Why not, and what effect can this have on costs of power to REA's?

Mr. LEAVY. As I indicated, there would be no effect, since under the Carolina and the proposed Georgia contracts the sale by the company would be at the same rate as the Government energy rate. So far as the economic result to the preferred agencies is concerned, it is precisely the same under the Carolina, Georgia, and VEPCO arrangements.

Mr. RABAUT. What effect has it on the service?

Mr. LEAVY. None whatever, sir. Physically the service is exactly the same, since it is all over the facilities of the company involved.

Mr. RABAUT. Under this arrangement, does the power company agree to meet growing loads of the REA's?

Mr. LEAVY. Yes, sir. If you are referring to the Georgia contract—and the same is true of Carolina and Virginia—the arrangements provide that the Government supply the load delivered to the preferred customers insofar as it is able to take care of their loads. In all of these situations, the amount available from the Government projects is substantially less than the preferred agency loads and in all of those arrangements the companies agree to supply any additional needed power at their regular rates.

Mr. RABAUT. At present rates, or regular rates?

Mr. LEAVY. They will supply now at their present rates.

Mr. RABAUT. Which is 6 mills?

Mr. LEAVY. The present company rate in Georgia for this power is an average of approximately 6.7 mills. The Clark Hill power will be sold at 6 mills.

Mr. RABAUT. If the Government had purchased the firming energy and resold it, could they have used the 6 mills?

Mr. LEAVY. You mean would the rate in all probability have been the same?

Mr. RABAUT. Yes.

Mr. LEAVY. It would be the same. The reason I say that is that in comparing the VEPCO and Carolina contracts, where in the one case the Government does purchase firming energy and in the other one it does not and the same project is involved, the economics to the Government are about the same; therefore there would be no opportunity to give a lower rate.

OTHER CONTRACTS

Mr. RABAUT. On page 5 of the justifications you say that a long-term contract will be developed in 1957 for the power of the Philpott Dam. Under your present interim contract, all of this power goes to the Appalachian Electric Power Co. Are there any preference customers in that area that have requested any of this power?

Mr. LEAVY. I believe I am correct in saying that there are no preference customers in the service area of that project who have requested power. However, we intend to make a further canvass of those preferred agencies before any long-term disposition of the power is made.

Mr. RABAUT. With respect to power from Old Hickory and Jim Woodruff projects, what proportion of the output have preference customers applied for up to this time?

Mr. LEAVY. As to Old Hickory, there have been no direct applications of preferred customers, since that project is in the TVA service area and it has been assumed that, like the other Cumberland projects, the output will be disposed of to TVA and simply go into their system.

With respect to the Jim Woodruff project, the applications for power in that area from preferred agencies far exceed the available power from the project. Just how the power from that project will be divided up is a little difficult to say, since there has been no final determination of what the rate will be for power at the project; and, we have not as yet any arrangements to firm up that power.

INTEGRATION OF SYSTEM

Mr. RABAUT. What progress has been made since last year toward further integration of the operation of some of the projects in this area?

Mr. LEAVY. We have made progress in some respects. It was proposed originally and we still propose to integrate the operation of the Kerr and Philpott projects. The contract with Virginia Electric & Power Co. provides for transmission for that purpose.

Our contract with Carolina Power & Light Co. also has provision for transmission for that purpose and we propose, as soon as we can, to negotiate a long-term contract with Appalachian to provide for the necessary transmission. As soon as that is done, we can then integrate the operation of those two projects.

We have made no further specific progress on integration of the Clark Hill and Jim Woodruff projects, but we are presently studying what can be done to integrate the Jim Woodruff, Fort Gaines, and Buford projects, all of which are in the Chattahoochee Basin. When we have reached a more conclusive point, we will then see what can be done to integrate those projects with the Clark Hill project. We know there are some possibilities there, but we do not know just what the costs might be.

Mr. RABAUT. Why have you refrained from seeking additional appropriations to tie some of these dams together so that you might have more power for preference customers?

Mr. LEAVY. I think the problem is that the distances involved and the amounts of power are such that if existing facilities can be used on a reasonable economic basis, the cost will be materially less than the cost of constructing transmission lines solely for the purpose of integration.

Mr. RABAUT. Who owns the existing facilities?

Mr. LEAVY. Generally they are owned by private companies. The facilities that are involved in these areas we are discussing are owned by private companies—in the Philpott area, by VEPCO, Carolina Power & Light, and Appalachian; and in the southern area, Georgia Power Co. facilities are primarily involved.

Mr. RABAUT. The existing facilities are owned by private companies; is that right?

Mr. LEAVY. Yes.

Mr. RABAUT. Now if you had the facilities would you have more power and would you be able to provide better service to your preference customers? To get those facilities, of course, it would be necessary to ask for an appropriation.

Mr. LEAVY. I think there are two parts to the answer to your question. In the first place, if we had the facilities or could use the existing facilities to integrate the projects physically there should be more power available to the preferred agencies; but it could be accomplished either by new facilities or existing facilities. It is our belief that if we can secure a transmission arrangement to use existing facilities at a reasonable price it will be more economical than to construct facilities, and therefore of greater benefit, rate-wise, to the preferred customers.

Mr. RABAUT. Has any attempt been made to do that?

Mr. LEAVY. Yes, sir; we have discussed in general with the Georgia Power Co., the question of transmitting power for the purpose of integration between the Clark Hill and Jim Woodruff projects. These discussions were deferred primarily because they were displaced by the more pressing problem of distribution of Clark Hill power.

Mr. RABAUT. In discussing this, is it the normal rate they wish to charge, or an abnormal rate?

Mr. LEAVY. We have not gotten to the point of any rate.

Mr. RABAUT. Have you talked rates at all?

Mr. LEAVY. No; we have talked about the physical aspects of whether it could be done.

Mr. RABAUT. What is the normal rate for wheeling?

WHEELING FEES

Mr. LEAVY. The rate for wheeling that we have been paying is 1 mill for the area that is within 100 miles of the particular project; 1.5 mills in the area from 100 to 150 miles from the project and, in the case of Georgia, 2.5 mills for the area beyond 150 miles. The rate for wheeling for integration purposes might be somewhat higher, since it may involve commitment of transmission capacity over a period of time on the part of the owner of the facilities.

Mr. RABAUT. Some rates appear to be higher than others. Is not Georgia high?

Mr. LEAVY. The Georgia rate is the same as in Virginia and Carolina, except it covers a greater area. It goes beyond 150 miles, which is not the case with Virginia and Carolina.

Mr. RABAUT. Then the Virginia and Carolina rates are high, are they?

Mr. LEAVY. No. They are all the same rates so far as the areas covered are concerned; but in Virginia and Carolina there are only 2 zones—the 100-mile zone and the 150-mile zone. In Georgia there are those 2 zones, plus a third zone beyond 150 miles, which makes the average rate at the outset somewhat higher. However, in Georgia we do anticipate that the average wheeling rate will be materially decreased as other projects in that State come into operation.

REVENUES

Mr. RABAUT. Last year it was estimated that the revenues would be $1,200,000 higher in 1955 and $2 million higher in 1956 than the

table of revenue on page 7 of the justifications shows. What accounts for last year's estimates being too high?

Mr. LEAVY. You are referring now to last year's estimates for this current year.

Mr. RABAUT. For this year.

Mr. LEAVY. There are two reasons. Primarily the reason is that all of the estimates are based on the assumption that average water conditions will prevail during the year. As a matter of fact however, at the Clark Hill project we have been going through the most critical water period of record. The water has been very low and that has reduced the revenues. Also, we have had low water at the Kerr and Philpott projects and, until very recently, on the Cumberland projects. The bulk of the decrease in the estimate results from that fact.

One other thing that makes some difference is that in making the estimate we had to make some assumptions as to when contracts would be entered into, and those have varied slightly.

Basically, however, it is the low-water conditions that are responsible.

SYSTEM STATISTICS

Mr. TABER. On page 224 of last year's hearings there was a table inserted in the record showing system statistics I would like to have that table brought up to date and put in the record.

Mr. LEAVY. I can do that.

Mr. RABAUT. Without objection, that will be done.

(The information follows:)

Project	Project costs			Power produced in fiscal year 1955			Status of revenues		
	Estimated total construction cost	Operation and maintenance [1]	Marketing costs	Installed generating capacity [2] (kilowatts)	Peak generation (kilowatts)	Energy (kilowatt-hours)	Fiscal year 1955, actual	Fiscal year 1956, estimated	Fiscal year 1957, estimated
Wolf Creek	$78,654,000	$230,000	$13,000	270,000	307,000	792,036,000	$3,950,000	$3,950,000	$3,950,000
Center Hill	43,870,000	180,000	7,000	135,000	153,000	362,195,000			
Dale Hollow	25,907,000	190,000	5,000	54,600	61,000	123,315,000			
Allatoona	31,047,000	176,000	19,000	74,000	79,000	79,478,000	801,554	840,500	1,000,200
Clark Hill	78,183,000	[3] 905,000	100,000	280,000	74,400	384,062,000	2,045,416	2,000,000	4,268,600
John H. Kerr	87,081,000	[3] 1,838,000	105,000	204,000	229,300	363,970,713	2,788,573	3,645,000	4,547,600
Philpott	13,340,000	81,000	12,000	14,000	12,000	15,711,800	197,561	208,500	217,100
Jim Woodruff	46,258,000	125,000	30,000						462,000
Old Hickory	48,750,000	232,000	8,000						900,000
Buford	40,596,000	[3] 301,000	26,000						595,400
Total	493,686,000	4,258,000	325,000	1,031,600	915,700	2,120,768,513	9,783,104	10,644,000	15,940,900

[1] Power facilities only.
[2] Nameplate rating of installed capacity.
[3] Includes cost of transmission service charge for Clark Hill and Buford projects and of purchased power and transmission service charge for John H. Kerr project.

Mr. TABER. I expect by this time you might be able to give us the actual figures for 1955 rather than estimated?

Mr. LEAVY. The estimate will be based on actual figures through March of 1955.

Mr. TABER. Through March of 1955?

Mr. LEAVY. 1956. We can give you the actual figures for fiscal 1955 and the estimate for fiscal 1956 will reflect actual figures through March of the fiscal year.

Mr. TABER. To what extent would that change the figure, if any? Would that change the figures that appear on page SEPA–7?

Mr. LEAVY. It will change the figures downward on all of the projects other than the Cumberland projects. As I indicated this morning, the estimate that appears in the justification is based on the assumption of average water conditions and at all of the projects, other than the Cumberland projects, water conditions have been below normal.

Mr. TABER. Is that under Dale Hollow?

Mr. LEAVY. Yes; that estimate will remain the same.

Mr. TABER. But the others will go down?

Mr. LEAVY. Yes, sir; in varying amounts. They will all go down.

Mr. TABER. Would you be able to tell us what they would be at this time?

Mr. LEAVY. The Allatoona estimate, which was originally $1,000,215 will——

Mr. TABER. It was originally $1,000,215?

Mr. LEAVY. Yes, sir. It will be approximately $840,500.

Mr. TABER. What about the Clark Hill?

Mr. LEAVY. The Clark Hill estimate, which was $3,117,920, will be approximately $2 million. That figure is approximate because it has to make an assumption as to when any arrangement with Georgia Power Co. would go into effect and any change in that assumption will change the estimate of revenues. Additionally, at this project we have experienced the lowest water conditions of record during the past 2 years.

For the Philpott project, the estimate was $219,200, and that will be changed to $208,500.

For the Kerr project, the estimate was $3,979,278 and that will be changed to $3,645,600.

Mr. TABER. That would be your current estimate?

Mr. LEAVY. That would be our current estimate. That is based on actual revenues through March and estimated revenues for the balance of the year based on actual water conditions for April and estimated average conditions for May and June.

Mr. TABER. The Philpott, is that so much of a power project?

Mr. LEAVY. It is a very small project, with 14,000 kilowatts of installed capacity.

Mr. TABER. Is it mostly flood control?

Mr. LEAVY. It is flood control and power; yes, sir.

Mr. TABER. Its power production is not so very high even for the generating capacity.

Mr. LEAVY. It is a small plant and there has been low water there as well, so power production has been at a minimum.

Mr. TABER. Are there any other projects that have come in since last year's hearings?

Mr. LEAVY. None have come in since that time.

Mr. TABER. The revenue estimates will be just about the same, not very far different for 1956 than for 1955; is that right; the overall?

Mr. LEAVY. They will not differ materially.

Mr. TABER. They will be a little higher overall, but not very much?

Mr. LEAVY. Not materially.

GEORGIA CONTRACT

Mr. TABER. These projects in Georgia, the distances are pretty great for handling power. It will be almost necessary to distribute that power in the locality, will it not?

Mr. LEAVY. The projects that are in or adjacent to Georgia will probably be distributed over a wide area through the facilities of the Georgia Power Co. In the case of Clark Hill, for example, the proposed arrangement would provide service over the entire service area of the Georgia Power Co.

Mr. TABER. Is that what your contract calls for?

Mr. LEAVY. That is right, sir.

Mr. TABER. In other words, you turn over to them a certain amount of electricity, they turn it back to designated customers of yours at other points?

Mr. LEAVY. They would take the Georgia share of the project physically into their system and a portion of that output would be wheeled for the Government and the Government would sell it directly to the preferred customers. There is also a portion sold directly to the company. Physically, it all goes into their system. They actually purchase only a portion of it. They do not purchase the portion which ultimately goes to the preferred customers.

Mr. TABER. You got a pretty favorable contract out of them, did you not?

Mr. LEAVY. I think it is a fair contract to all parties concerned. I doubt that any party is wholly satisfied. Everyone has had to give a little, but it is a fair contract.

Mr. TABER. I do not think anybody is making any money.

Mr. LEAVY. I think it is a fair contract for all parties.

Mr. TABER. Now, do I understand that page 7 of the justification is in the record?

Mr. LEAVY. I believe page 7 is in the record; yes, sir.

Mr. TABER. And is page 5?

Mr. LEAVY. It is my recollection this morning that pages 5 through 15 were put in the record and my statement, which is in the record, also has the attachment concerning revenues.

POWER CAPACITY OF CLARK HILL DAM

Mr. TABER. How much of a load do you figure Clark Hill will be able to operate with on an average?

Mr. LEAVY. The dependable capacity at Clark Hill is 240,000 kilowatts.

Mr. TABER. Two hundred and forty thousand?

Mr. LEAVY. Yes, sir.

Mr. TABER. And the dependable capacity is that much?

Mr. LEAVY. That is the capacity that is estimated to always be available.

Mr. TABER. Now, last year the installed capacity was given as 280,000 and the peak generation was given as 115,000?

Mr. LEAVY. That is correct.

Mr. TABER. Now, is there anything different about it at this time?

Mr. LEAVY. During the period that the peak capacity generated was 115,000, that was the capacity which was needed to generate the energy being sold from the project. If our arrangement that is proposed in Georgia goes into effect, that figure will be materially increased, since, under the Georgia contract, we would be required to generate 120,000 kilowatts solely for that purpose.

Mr. TABER. Would there be other capacity besides that?

Mr. LEAVY. Yes, sir; there would be capacity used to generate the power which is being sold in South Carolina.

Mr. TABER. But the peak generation, so far, has been 115,000?

Mr. LEAVY. Let me see if there was a higher figure during this past year. That probably is the peak generation to date.

Mr. TABER. What about the Kerr project?

Mr. LEAVY. Peak generation during fiscal 1955 was 229,300. It has been up to about 240,000 this year.

Mr. TABER. It has been up to 240,000?

Mr. LEAVY. Yes, sir.

Mr. TABER. How much of the time has it been up there?

Mr. LEAVY. Two hundred and forty thousand was generated for a period of about 1 week during high water. The generation is normally about 200,000 kilowatts.

Mr. TABER. Would that same thing apply to the Clark Hill project?

Mr. LEAVY. I would doubt under the marketing arrangements in view that the Clark Hill project would be operated at quite as high a percentage of its installed capacity on an average basis.

Mr. TABER. 115,000 would be somewhere near——

Mr. LEAVY. It would be higher than that, sir. I would guess that it would be 175,000 to 200,000, or rather 200,000 to 220,000.

POWER CAPACITY OF ALLATOONA PROJECT

Mr. TABER. What about the Allatoona project?

Mr. LEAVY. That was 87,300 during fiscal 1954. During fiscal 1955 the peak was 79,000. I would judge about 80,000 would be probably a normal figure for that plant.

Mr. TABER. That has an installed capacity of how much?

Mr. LEAVY. 74,000.

Mr. TABER. You would be pretty well up when you got that far.

Mr. LEAVY. As I understand it, there is some overload capacity above rated capacity.

Mr. TABER. Yes; that is correct. These plants on the Cumberland all come nearer to their peak load capacity; is that right?

Mr. LEAVY. I would say so when the water is available they are operated at their peak capacity.

Mr. TABER. That is all I have.

POWER CAPACITY AT CLARK HILL DAM

Mr. PHILLIPS. I am not sure Mr. Taber covered this.

Under the drought conditions of last year what energy was available in the months of the lowest and most adverse conditions per kilowatt of dependable capacity? Do you know?

Mr. LEAVY. Your question is addressed to Clark Hill solely?

Mr. PHILLIPS. Yes.

Mr. LEAVY. Let me ask Mr. Wigglesworth to answer the question for you, sir.

Mr. WIGGLESWORTH. At the Kerr project and the Philpott project we had our normal minimum energy, which is about 100 kilowatt-hour per kilowatt of dependable capacity, per month. At Clark Hill, in view of the fact that we had not sold all the capacity of the project, the amount of energy that we took out in the lowest month was based upon the stream flow requirements.

Mr. PHILLIPS. Obviously what I am getting at is: Did you actually have, or can you count on having, on the basis of this past experience, enough capacity or enough energy to supply the present contracts?

Mr. WIGGLESWORTH. Yes; we can.

Mr. PHILLIPS. Did you?

Mr. WIGGLESWORTH. We did not actually generate that much in the last year.

Mr. PHILLIPS. Could you have?

Mr. WIGGLESWORTH. We could not have in 1955 because in 1954 we generated more energy than was necessary. Based on the dry period at Clark Hill we will revise the amount of energy that goes with the capacity and in any future operation the energy with each kilowatt will be less and therefore we will be able to supply the energy that goes with the kilowatts.

Mr. PHILLIPS. I will have to read that in the transcript.

You did not have enough energy last year and if we have another dry year you will not——

Mr. WIGGLESWORTH. That was because we had taken more than we should have in 1954.

Mr. PHILLIPS. I do not yet have that connected with the second statement. You took out more than you needed in 1954 but did not have enough in 1955. How do you deduce from that you will have enough at a future time?

Mr. WIGGLESWORTH. We have had a 2-year dry period and went into the dry period in 1954 not realizing what we were getting into.

Mr. TABER. What do you mean by that? You mean you drew the dam down?

Mr. WIGGLESWORTH. Yes, we drew more out of the reservoir in 1954 than we would have had we known what sort of a dry period we were having.

Mr. TABER. Did you draw down more than you normally would?

Mr. WIGGLESWORTH. Yes.

Mr. PHILLIPS. What sort of crystal ball did you buy that will tell you when not to draw down sometime in the future?

Mr. WIGGLESWORTH. We always operate on the basis of the dryest period we have in the record, which up until 1954 with respect to Clark Hill was 1925. But the drought that we had in 1954 and 1955 was much worse than we had had in 1925 so that now we have a new dry period of record.

Mr. PHILLIPS. Now you revise your methods and take 1955 for your base?

Mr. WIGGLESWORTH. That is right.

Mr. PHILLIPS. I want to ask another question about the rates that you charge TVA. You sell power from Dale Hollow and Wolf Creek. I recall in one of the special supplementals or the regular last year, the question was raised as to whether you were charging TVA a rate that actually covered cost of power created. If I remember correctly, the engineers contended that you were not charging enough if you had a proper allocation of costs to power and it was left—I am still struggling with my memory—it was left that you were going to investigate it.

I ask the double-barreled question: Did you investigate it and what results did you come up with? Second, did you increase your rates to TVA?

Mr. LEAVY. We have increased the rate to TVA. It has not, however, been on the basis of a cost allocation method different from that originally in the contract.

Mr. PHILLIPS. How much did you increase it?

Mr. LEAVY. $450,000 a year on an average basis, from $3,500,000 to $3,950,000.

Mr. PHILLIPS. Upon what basis did you increase it, if not on the basis of proper allocation?

Mr. LEAVY. It was increased on the basis of some greater capital costs than were considered in the original contract and increased operation and maintenance costs.

Mr. PHILLIPS. It sounds as if that were saying the same thing the engineers said, but in different language.

Mr. LEAVY. No, sir; I think the engineers would apply a different method of cost allocation, which would increase the amount of the capital cost allocated to power.

Mr. PHILLIPS. If you wanted to take a source of information, as an accountant, would you take the engineer that built it or would you take somebody else?

Mr. LEAVY. The situation was that we had an existing contract with TVA and there had been serious question as to the latitude that might be allowed in departing from the premises of the original method of allocation.

In addition, the legislative history, in our view, has indicated that the original allocation had some foundation.

Mr. PHILLIPS. That is your argument and the corps does not quite agree with you? Is your problem that you have already committed yourself by a contract to TVA and cannot change it?

Mr. LEAVY. There is a commitment to TVA. In addition, we feel that the legislative history on those projects justifies the course of action that was taken. It is true that the corps does not agree with that. A submission has been made to the Federal Power Commission on the basis of the original method of allocation.

Mr. TABER. I wonder if you could give me the operating expense of these different projects for each of them?

Mr. LEAVY. Yes, sir. That will be in the tabulation I will furnish, but I can give it to you.

Mr. TABER. If you will do that, all right. That will be in there.

Mr. PHILLIPS. Where is that? Something you put in the testimony today?

Mr. LEAVY. Mr. Taber asked me to put in the same tabulation we put in last year and it will include that item.

Mr. TABER. That is all right, if it is in there. That is all.

GEORGIA POWER COMPANY CONTRACT

Mr. PHILLIPS. I have another question to ask of Mr. Aandahl, if he is coming back.

You remember, Mr. Chairman, I have not been here for several weeks and if I ask anything that has been completely covered, you tell me.

I have a statement by Mr. Harrison in which he seems to think that the division of power or payment in the case of Clark Hill is not adequate and that in his words "somebody is getting the whole cheese and somebody else is getting the hole."

That did not correspond to the testimony which I think Mr. Leavy gave this morning. What I want to know is what is the status—I think you pretty well covered that—what is the status of negotiation on this Clark Hill power for Georgia? Is it a fact that the cooperatives are getting preferential rates, or is it a fact that they are getting the holes in the cheese as Mr. Harrison seems to think?

Mr. LEAVY. I think there has been considerable progress toward a solution since the time Mr. Harrison appeared. As I said this morning, I think it is a fair arrangement. I think the fact that the preferred agencies have indicated that they will accept it is the best evidence of the fairness to all concerned.

Mr. PHILLIPS. I gathered from what Mr. Harrison's testimony seems to be from reading it hastily, he wants Congress to put up $150,000 for transmission lines or planning for the transmission lines. Is that being settled by this other contract?

Mr. LEAVY. I would say if the contract is entered into it would not be necessary.

Mr. PHILLIPS. That is what I thought.

ADMINISTRATION OF WATER AND POWER AGENCIES

Mr. Aandahl, I had a rather personal question of you, if you will pardon me. You and I served together here on the Hill and I do not need to tell you or the other Members of Congress that you have the highest respect of the Congress. You were a good Congressman and a good governor. It seems to me, as one Member of Congress, that you were under partisan and considerably unwarranted attacks on the basis of the development and handling of the natural resources end of your job.

As I say, we respect you for your integrity and your honesty and these attacks on you and other officials of the Department will probably boomerang on the people who make them, but do you care to say anything on the subject of how you have been carrying out laws in your Department with special reference to public works projects? If not, that is up to you. We do not like to have you attacked unjustly.

Mr. AANDAHL. I think probably I should say my immediate responsibility is with the water and power agencies and I would like to direct my comments to what we have been doing in those agencies.

To the best of my knowledge we have been administering the Department of Interior with respect to the water and power agencies within the letter and spirit of the law, and I think contracts that we have negotiated are commendable contracts and accomplish the basic purpose that we should have in mind as we proceed.

Mr. PHILLIPS. My other questions have to do with Southwest Power, Mr. Chairman.

MONDAY, APRIL 30, 1956.

SOUTHWESTERN POWER ADMINISTRATION

WITNESSES

DOUGLAS G. WRIGHT, ADMINISTRATOR
FRED G. AANDAHL, ASSISTANT SECRETARY OF THE INTERIOR

OPERATION AND MAINTENANCE

Program and financing

	1955 actual	1956 estimate	1957 estimate
Program by activities:			
1. System operation and maintenance	$502,763	$685,000	$435,000
2. Power contracts and rates	55,942	80,000	80,000
3. General administration	276,550	485,000	485,000
Total obligations	835,255	1,250,000	1,000,000
Financing:			
Comparative transfer to other accounts	1,732,698		
Unobligated balance transferred from "Construction, Southwestern Power Administration" (68 Stat. 362)	−775,000		
Unobligated balance no longer available	15,895		
Appropriation (adjusted)	1,808,848	1,250,000	1,000,000

Obligations by objects

Object classification	1955 actual	1956 estimate	1957 estimate
Total number of permanent positions	148	144	144
Full-time equivalent of all other positions	6	8	8
Average number of all employees	130	147	146
Number of employees at end of year	106	151	150
Average salaries and grades:			
General schedule grades:			
Average salary	$5,472	$5,597	$5,668
Average grade	GS-7.7	GS-7.7	GS-7.6
Ungraded positions: Average salary	$4,089	$4,451	$4,432
01 Personal services:			
Permanent positions	$630,307	$733,755	$732,815
Positions other than permanent	13,433	20,000	20,000
Regular pay above 52-week base	1,915	2,995	
Payment above basic rates	26,432	25,750	30,185
Other payments for personal services	262		
Total personal services	672,349	782,500	783,000
02 Travel	63,188	95,000	95,000
03 Transportation of things	2,261	5,000	3,000
04 Communication services	24,111	28,000	29,000
05 Rents and utility services	18,031	18,000	18,000
06 Printing and reproduction	1,747	2,000	2,000
07 Other contractual services	18,501	270,000	25,000
08 Supplies and materials	33,033	34,000	32,000
09 Equipment	531	14,000	11,500
13 Refunds, awards, and indemnities	10		
15 Taxes and assessments	1,493	1,500	1,500
Total obligations	835,255	1,250,000	1,000,000

Budget authorizations, expenditures and balances

	1955 actual	1956 estimate	1957 estimate
BUDGET AUTHORIZATIONS AVAILABLE			
Appropriation	$2,165,000	$1,250,000	$1,000,000
Transferred to—			
"Salaries and expenses, Office of the Solicitor, Interior" (68 Stat. 362)	−61,500		
"Operation and maintenance, Bonneville Power Administration" (69 Stat. 240)	−4,418		
"Surveys, investigations, and research, Geological Survey" (69 Stat. 240)	−290,234		
Adjusted appropriation	1,808,848	1,250,000	1,000,000
Obligated balance brought forward	79,770	290,643	250,000
Unobligated balance transferred from "Construction, Southwestern Power Administration" (68 Stat. 361)	775,000		
Increase in prior year obligations	450		
Total budget authorizations available	2,664,068	1,540,643	1,250,000
EXPENDITURES AND BALANCES			
Expenditures—			
Out of current authorizations	2,277,325	1,000,000	900,000
Out of prior authorizations	74,974	290,643	250,000
Total expenditures	2,352,299	1,290,643	1,150,000
Balance no longer available:			
Unobligated (expiring for obligation)	15,895		
Other	5,231		
Obligated balance carried forward	290,643	250,000	100,000
Total expenditures and balances	2,664,068	1,540,643	1,250,000

Continuing Fund

AMOUNTS AVAILABLE FOR APPROPRIATION

	1955 actual	1956 estimate	1957 estimate
Unappropriated balance brought forward	$1,034,623	$2,296,685	$646,685
Unobligated balance returned to unappropriated receipts	74,289		
Receipts	3,687,773	9,350,000	12,325,000
Total available for appropriation	4,796,685	11,646,685	12,971,685
Covered into miscellaneous receipts	−2,500,000	−5,000,000	−6,000,000
Appropriation		−6,000,000	−6,400,000
Unappropriated balance carried forward	2,296,685	646,685	571,685

PROGRAM AND FINANCING

	1955 actual	1956 estimate	1957 estimate
Program by activities:			
1. Purchase of energy and wheeling charges	$1,732,698	$3,500,000	$3,696,000
2. Rentals for the use of transmission facilities		2,000,000	2,704,000
Total obligations	1,732,698	5,500,000	6,400,000
Financing:			
Comparative transfer from other accounts	−1,732,698		
Unobligated balance brought forward	−300,000	−300,000	−300,000
Unobligated balance no longer available (expiring for obligation)		500,000	
Unobligated balance carried forward	300,000	300,000	300,000
Appropriation		6,000,000	6,400,000

Obligations by objects

07	Other contractual services:	
	1955	$1,732,698
	1956	5,500,000
	1957	6,400,000

Budget authorizations, expenditures and balances

	1955 actual	1956 estimate	1957 estimate
BUDGET AUTHORIZATIONS AVAILABLE			
Appropriation		$6,000,000	$6,400,000
Balance brought forward:			
Unobligated	$300,000	300,000	300,000
Obligated	621,306	493,940	993,940
Total budget authorizations available	921,306	6,793,940	7,693,940
EXPENDITURES AND BALANCES			
Expenditures—			
Out of current authorizations		4,506,060	5,865,000
Out of prior authorizations	53,077	493,940	993,940
Total expenditures	53,077	5,000,000	6,858,940
Balance no longer available:			
Unobligated (expiring for obligation)		500,000	
Other	74,289		
Balance carried forward:			
Unobligated	300,000	300,000	300,000
Obligated	493,940	993,940	535,000
Total expenditures and balances	921,306	6,793,940	7,693,940

Mr. CANNON. We have before us the Southwestern Power Administration. Mr. Aandahl, do you have a statement?

Mr. AANDAHL. I would like to have the Administrator, Mr. Wright, present the testimony in support of the budget for that agency.

Mr. CANNON. Mr. Wright, we are glad to have you with us again.

Mr. WRIGHT. Thank you, Mr. Chairman. I have a very brief statement, which I would like to read.

Mr. CANNON. You may proceed. You have no other information to convey to the committee than is given in this statement?

Mr. WRIGHT. I have a great deal more, but I would prefer to shoot from the hip without writing it down.

Mr. CANNON. Very well.

GENERAL STATEMENT

Mr. WRIGHT. Mr. Chairman and gentlemen of the committee, the budget estimate of the Southwestern Power Administration for its operation and maintenance program in the fiscal year 1957, is $1 million. This request will enable the Administration to operate and maintain its transmission system, carry on power-marketing negotiations, provide customer services, and administer contracts between the Administration and certain generation and transmission cooperatives. The program will be performed under the following activities and amounts: "System operation and maintenance," $435,000; "Power contracts and rates," $80,000; and "General administration," $485,000.

Under the continuing fund an estimate of $6,400,000 for the fiscal year 1957 is requested for the purchase of power, service or wheeling charges, and rental of transmission facilities under contractual agreements with private utilities and generation and transmission cooperatives.

With the committee's permission I would like to discuss some of the details of the program and also submit supporting data concerning certain phases of the program.

Now, Mr. Chairman, if I may, I would like to present to the clerk copies of a number of exhibits which I will ask be inserted in the record. But I would like to discuss each one of them briefly before they are inserted in the record so that, if there is objection to their insertion, it can be raised by the members.

Summary Justification Data

Mr. Cannon. We will include in the record pages 4 through 9 as submitted under "Operation and maintenance"; also, on the continuing fund, pages 13 through 18.

(The matter referred to follows:)

Justification

operation and maintenance

System operation and maintenance, $435,000

In order to accomplish its function of marketing surplus power from Federal hydroelectric generating plants in the southwestern power area the Administration has constructed 1,004 miles of high-voltage transmission lines, with appurtenant facilities, to power-load centers and to points of interconnection with other utility systems. Power will be marketed from 8 Federal hydroelectric generating plants, and 3 steam generating plants owned and operated by generation and transmission cooperatives in the fiscal year 1957.

Five of the hydroelectric plants are directly interconnected by the transmission grid system of the Administration. Through interconnections with the systems of the generation and transmission cooperatives and the private utility systems, the power generated at these plants and the three steam generation plants owned by the cooperatives, is integrated with power generation from steam plants of the private utilities. This obtains the maximum benefit from integration of hydroelectric and steam generated power.

The power produced from the three other Federal hydroelectric plants which are now in operation, and which are isolated from the main grid system of the Administration is marketed through contractual arrangements with private utility systems and generation and transmission cooperatives. This power is transported over the transmission facilities of these entities, for their own use as customers of the Administration, and for service to other customers of the Administration.

The complex problems encountered in the operation of these vast interconnected systems make it necessary to maintain a staff of highly trained technical personnel, and to operate and maintain the transmission system of the Administration with the maximum of efficiency to assure dependable service throughout the southwestern power area.

In order to furnish and assure reliable service over its system, the Administration employs three line maintenance crews which are stationed at Ada and Muskogee, Okla. and Doniphan, Mo. These crews patrol and maintain the following miles of line:

	Miles
Ada, Okla., crew	318.7
Muskogee, Okla., crew	326.2
Doniphan, Mo., crew	327.5

Two substation maintenance crews are located at Springfield, Mo, and Muskogee, Okla. These crews maintain the substations, meter and relays, and communication equipment located over the entire transmission system of the Administration, and also maintain metering, communication, and protective equipment owned by the Administration, but located at 8 federally-owned hydroelectric plants, and at 15 substations owned by interconnecting utility systems.

Load dispatchers are located at Springfield, Mo., substation, and are responsible for scheduling and dispatching power to meet load demands while coordinating to the best advantage the loading of the various hydroelectric plants operated by the Corps of Engineers, together with steam generating plants owned and operated by the G. and T. cooperatives. In order to perform this function properly, it is necessary to maintain a 24 hour a day, 7 days a week schedule. A substation

operator is stationed at the Gore, Okla., substation in order to switch power during peak-load hours.

In addition to the maintenance and operation of transmission facilities it is necessary to maintain a continuous program of clearing rights-of-way on transmission lines. This preventive maintenance is performed in order to avoid outages that interrupt the power service, resulting from brush fires and tree growth on the rights-of-way.

Funds are also included under this activity for the engineering and supervisory staff, which furnishes the executive and staff direction of engineering planning, and technical supervisory functions in connection with the operation and maintenance of the transmission system, and the coordination and integration with other utility systems. In addition, this staff participates in the study of power resources and requirements in order to assure dependable electric service to customers and interconnecting systems.

Also, this staff in accordance with existing regulations makes studies of the revenue potential from multiple-purpose projects to be constructed by the Corps of Engineers, in order to determine the feasibility of installing power facilities in such proposed projects. When these projects have reached the preliminary planning stage this staff participates with the Corps of Engineers in making studies of the design of the power-transmission installations, such as circuit breakers, transformers, telemetering, relays, supervisory equipment and associated equipment for dispatching and control of the power produced from such projects.

The following tabulation indicates the estimated obligations for 1957 by organizational units under this activity.

Organizational unit	Number	Amount
Division of Operations and Engineering:		
Chief's Office	3	$24,180
Branch of Engineering and Planning	8	56,055
Branch of Maintenance	37	169,639
Branch of System Operations	8	43,761
Total permanent	56	293,635
Deduct lapses	2	12,080
Net permanent	54	281,555
Positions other than permanent		20,000
Payment above basic rates		18,445
Total personal services		320,000
Travel		56,000
Other objects		59,000
Total, system operation and maintenance		435,000

Power contracts and rates, $80,000

This estimate covers funds for personal services and travel of the Division of Rates and Customer Service. The staff of this Division carries out all marketing agreements with preferred customers and private utilities for the purchase, sale and interchange of electric power and energy.

In order to perform the function outlined above, it is necessary for this staff to conduct negotiations and develop contracts for the sale, exchange, transfer and purchase of power and energy, and for the lease of power system facilities, together with arrangements for the wheeling of Government power over the various transmission systems. To make continual analyses of power rates to insure that sufficient revenue is derived from the sale of power and energy for the amortization of the Government's investment in both production and transmission facilities. To calculate rates and prepare payout studies for submission to the Federal Power Commission for approval. To perform customer services under all contractual agreements. Conduct studies of the market for power to be produced from future projects, and the revenues that would be derived from the sale of such power.

The following tabulation indicates the number of positions and the estimated personal services and travel costs of this Division that are considered necessary to carry out this activity for the fiscal year 1957.

Organization unit	Number	Amount
Division of Rates and Customer Service	12	$72,070
Deduct lapses	.3	1,550
Net permanent	11.7	70,520
Payment above basic rates		480
Total personal services		71,000
Travel		9,000
Total, power contracts and rates		80,000

General administration, $485,000

The estimate for this activity includes the cost of personal services, travel and other general administrative expenses chargeable to electric operations of the Administration, but not directly chargeable to a particular electric function, such as production, transmission, sales and customer services, etc. These costs cover the executive direction and service functions necessary to accomplish the overall program of the Administration.

Additional costs not pertaining to the direct electric operations of the Administration are included under this activity because of action by the Congress in providing funds for fiscal year 1956 for the reactivating of contracts with certain generation and transmission cooperatives which placed an additional administrative burden on the Administration. These costs include additional administrative and technical personnel, together with related costs, that will be necessary to properly administer the contracts between this Administration, and the generation and transmission cooperatives. A breakdown of these costs for the fiscal year 1957 is as follows:

Organizational unit	Number of positions	Amount
Division of Administrative Services	22	$102,795
Division of Operations and Engineering	24	111,995
01 Personal services	46	214,790
Travel		9,000
Other objects		30,000
Total	46	253,790

The tabulation on the following page indicates the total estimated obligations for 1957 by organizational units under this activity.

Organization unit	Number	Amount
Office of the Administrator:		
Immediate office	6	$48,425
Division of Administrative Services:		
Chief's office	4	31,105
Branch of budget and finance	20	108,470
Branch of office services	22	104,145
Total, Division of Administrative Services	46	243,720
Division of Operations and Engineering:		
Branch of engineering and planning	9	40,065
Branch of maintenance	14	65,540
Branch of operations	1	6,390
Total, Division of Operations and Engineering	24	111,995
Total permanent	76.0	404,140
Deduct lapses	4.4	23,400
Net permanent	71.6	380,740
Payment above basic rates		11,260
Total personal services		392,000
Travel		30,000
Other objects		63,000
Total, General Administration		485,000

JUSTIFICATION

CONTINUING FUND

Power purchases, service charges, and rental of facilities, $6,400,000

Obligations to be incurred during the fiscal year 1957, under the continuing fund are based upon contractual arrangements for the purchase and sale of power including service charges for transport of power with private utilities in the area, and for the purchase of power and lease of transmission capacity from power cooperatives in the area. Estimated fund requirements by activity are listed below:

	Purchase of power and service charges	Rental of transmission facilities	Total
1. Oklahoma utility companies	$193,000		$193,000
2. Central Electric Power Cooperative	737,000	$648,000	1,385,000
3. N. W. Electric Power Cooperative	1,800,000	393,000	2,193,000
4. Western Farmers Electric Cooperative	966,000	756,000	1,722,000
5. Sho-Me Power Corp		351,000	351,000
6. KAMO Electric Cooperative		556,000	556,000
Total	3,696,000	2,704,000	6,400,000

The estimated fund requirements by private utilities and cooperatives have been calculated in accordance with provisions within each individual contract and presented herewith.

1. Payment to Oklahoma utility companies:
   - A. Charges from companies:
     - Purchase of power: 16,344,400 kilowatt-hours x $.004 — $65,378
     - Service charge: 163,464,400 kilowatt-hours x $.00125 — 204,330
     - Total charges — 269,708
   - B. Sales to companies: 5,573 x $1.15 x 12 — —76,907
   - C. Amount due companies — 192,801

2. Payment to Central Electric Power Cooperative:
   - A. Charges from cooperative:
     - Rental payments:
       - Transmission investment ($9,546,000):
         - $\frac{\$9,546,000}{1,000}$ x 4 x 12 — 458,208
         - Estimated overhead — 29,592
         - Estimated maintenance and operation — 126,635
         - Estimated replacements — 34,000
       - Total — 648,000
     - B. Purchase of power: 115,000,000 kilowatt-hour x $0.006405 — 736,575
     - C. Total — 1,384,575

3. Payment to N. W. Electric Power Cooperative:
   A. Charges from cooperative:
      Rental payments:
         Transmission investment ($6,210,000);
         $\frac{\$6,210,000}{1,000}$ x 4 x 12 ..... $298,080
         Estimated overhead 22,920
         Estimated maintenance and operation 50,256
         Estimated replacements 22,000
         Total 393,256
   B. Purchase of power: 282,000,000 kilowatt-hours, $150,000 x 12 1,800,000
   C. Total 2,193,256

4. Payment to Western Farmers Electric Cooperative:
   A. Charges from cooperative:
      Rental payments:
         Transmission investment (11,397,000):
         $\frac{\$11,397,000}{1,000}$ x 4 x 12= 547,056
         Estimated overhead 20,944
         Estimated maintenance and operation 146,871
         Estimated replacements 41,000
         Total 755,871
   B. Purchase of power:
      225,000,000 kilowatt hours (steam) 945,000
      5,000,000 kilowatt hours (diesel) at $0.0042 per kilowatt hour 21,000
      966,000
   C. Total 1,721,871

5. Sho-Me Power Corp.:
   A. Charges from corporation:
      Rental payments:
         Transmission investment ($5,159,000):
         $\frac{\$5,159,000}{1,000}$ x 4 x 12= 247,632
         Estimated overhead 20,370
         Estimated maintenance and operation 63,680
         Estimated replacements 19,000
         Total 350,682

6. KAMO Electric Cooperative:
   A. Charges from cooperative:
      Rental payments:
         Transmission investment ($7,821,000):
         $\frac{\$7,821,000}{1,000}$ x 4 x 12= 375,408
         Estimated overhead 24,592
         Estimated maintenance and operation 128,387
         Estimated replacements 28,000
         Total 556,387

Itemization of estimate, continuing fund, Southwestern Power Administration

	Estimate, 1956	Estimate, 1957	Increase (+) or decrease (−)
PROGRAM AND FINANCING			
Total obligations	$5,500,000	$6,400,000	+$900,000
Balance no longer available: Unobligated (expiring for obligation)	+500,000		−500,000
Appropriation	6,000,000	6,400,000	+400,000
OBLIGATIONS BY OBJECTS			
07 Other contractual services	5,500,000	6,400,000	+900,000

Operation and Maintenance

Mr. Cannon. As we go along, as these exhibits become pertinent, we will take them up and decide later whether to include them in the record.

(The following table was later approved for insertion:)

Department of the Interior Southwestern Power Administration

Operation and maintenance appropriations, expenditures and unexpended balances, fiscal years 1944 through 1955

Fiscal year		Appropriation	Expenditures	Unexpended balance of
1944 through 1952		$3,541,712	$2,757,102	[1] $784,610
1953		1,450,000	1 112,813	[1] 337,187
1954		1,600,000	1,247,246	[2] 352,754
1955 Appropriation	$2,165,000			
Transfer of funds	[3] 775,000	2,940,000	2 550,788	[4] 389,212
Total		9,531,712	7,667,949	1,863,763

[1] Returned to Treasury.
[2] To be returned to Treasury June 30, 1956.
[3] $775,000 transfer of funds from "Construction, SPA" (68 Stat. 361).
[4] Unexpended balance of $389,212 distributed as fo'lows: $61,500 transferred to Office of the Solicitor, Interior (68 Stat. 361); $290,234 transferred to Geological Survey, Interior (69 Stat. 238); $4,418 transferred to Bonneville Power Administration, Interior (69 Stat. 238); $33,060 balance to be transferred to Treasury June 30, 1957, after liquidation of outstanding liabilities ($356,152 transferred as of Dec. 31, 1955).

Mr. Wright. The first tabulation I shall hand you deals with what we have done with operation and maintenance money Congress has seen fit to give us in the past. I have a rather peculiar feeling we are faced with a certain stewardship and we ought to come back to this committee and tell you what we did with what you gave us last year and also, perhaps in the enthusiasm of youth which is fast waning, I have always entertained the idea that the committee might be glad if we brought back a tabulation showing we had saved a little money. I do not know, but I have been given, on several occasions, the thought that if you save money you may impress the committee with the fact it had given you too much last year. I do not believe that is so. I am going to continue to try to bring back a statement, if I can, to show that we operate as cheaply as we know how.

The first tabulation shows the total appropriations for maintenance and operation made to the Southwestern Power Administration. This tabulation shows from 1944 through 1955, we have had a total of $9,531,712 appropriated to us and, of this amount, we have expended

$7,667,949; we have saved $1,863,763, or about 20 percent of the appropriations to date.

Mr. CANNON. And continuing your policy in that respect, you expect to make every effort to economize on the appropriation for which you are asking in this budget?

Mr. WRIGHT. I do, sir. I offer this as evidence of my good faith.

Mr. CANNON. But you will not economize at the expense of service?

DISTRIBUTION OF SAVINGS

Mr. WRIGHT. No, sir. Of that saving, $775,000 of construction funds was transferred to maintenance and operation appropriation to make these funds available. That is under footnote 3.

Of the savings, under footnote 1, $784,610 and $337,187 have been returned to the Treasury of the United States; $352,754, under footnote 2, will be returned to the Treasury of the United States on June 30, 1956.

Of the $389,212, distribution was made in accordance with footnote 4—$61,500 transferred to the Office of the Solicitor, Interior; $290,234 transferred to Geological Survey, Interior, and $4,418 transferred to Bonneville Power Administration, Interior, and $33,060 will be transferred to the Treasury on June 30, 1957, after liquidation of outstanding liabilities.

Mr. CANNON. Of the total of $389,212, who decided as to the allocation of those funds?

Mr. WRIGHT. The Secretary of the Interior authorized and directed this transfer.

Mr. CANNON. Was it done after you had indicated the amount you would not require, or did you reduce your requirements to fit in with the suggestion of somebody else?

Mr. WRIGHT. The transfers were made during the year and I am sure the committee, knowing me, if I had thought we required it, there would have been an awful yell if somebody tried to take it away from me.

Mr. CANNON. You were in complete accord with the distribution of each of those transfers?

Mr. WRIGHT. I was in accord with the fact we did not require them and, if the Secretary required them somewhere else, it was all right with me.

Mr. CANNON. Did you save, or did the Department of the Interior save, anything out of it, or was it all expended?

Mr. WRIGHT. I have no idea as to that.

Mr. CANNON. You made the saving and they distributed the money. Secretary Aandahl, was all of that money expended for the purpose indicated here?

Mr. AANDAHL. I do not have a tabulation of that information; but I would be of the opinion that when the transfer was made there was specific need for it at that time. And Mr. Larson just tells me that the most of it was absorbed in increases in pay.

Mr. CANNON. You saved none of it as far as you are concerned; the entire amount was expended?

Mr. AANDAHL. The amounts of the transfers were expended.

Mr. CANNON. The entire amount was expended?

Mr. AANDAHL. Yes, sir.

Mr. CANNON. Had Southwestern used all of their funds and had none unobligated, you would have gone without the services of this $389,212?

Mr. AANDAHL. Less the $33,060 that still remained. It might have been possible to find some other source of transfer within the Department of the Interior if it had not been available in this fund.

Mr. WRIGHT. I am told by the budget officer that these transfers were absorbed by the pay raises authorized by Congress for the agencies. We were able to absorb our own and still save those funds.

Mr. CANNON. The only purpose for which it was expended, then, was for the purpose of meeting the statutory pay raise?

Mr. WRIGHT. I understand that is correct.

CONSTRUCTION APPROPRIATIONS

The second tabulation I wish to hand you is a tabulation showing the total appropriations that have been made to the Southwestern Power Administration for construction and the utilization of those funds. From 1947 to 1953 there have been total appropriations for construction in the amount of $27,120,000. The operation and maintenance savings which were transferred and merged with construction appropriation amounted to $257,913, making a total available of $27,377,913. Of this amount, $2,477,743 was saved and $1,702,743 was returned to the Treasury and $775,000 was transferred by the Appropriation Act for maintenance and operation purposes, as we indicated in the previous tabulation.

Returned to the Treasury and the years in which returned, were $248,831 returned in 1947; $1,264,300 returned in 1954 and $189,612 returned in 1956.

(The following table was later approved for insertion:)

DEPARTMENT OF THE INTERIOR, SOUTHWESTERN POWER ADMINISTRATION

Construction appropriations, fiscal years 1947 through 1956

Fiscal year:		*Amount*
1947 appropriation		$7,500,000
1950 appropriation		3,475,000
1951 appropriation		8,620,000
1952 appropriation		3,375,000
1953 appropriation		4,150,000
Total appropriations		27,120,000
1950 Operation and maintenance savings, transferred to and merged with construction appropriation		257,913
Adjusted: Total appropriations		27,377,913
Less: Amounts returned to Treasury and transferred to operation and maintenance:		
Returned to Treasury	$1,702,743	
Transferred to operation and maintenance	775,000	
		2,477,743
Net appropriations		24,900,170
Returned to Treasury:		
1947 (expired for expenditure)		248,831
1954 (Public Law 172, title V)		1,264,300
1956 (Administrative action)		189,612
		1,702,743
Transferred to operation and maintenance, 1955, (Public Law 465, Title I)		775,000

Mr. CANNON. There was no surplus in the intervening years?
Mr. WRIGHT. No, sir.
Mr. CANNON. None in 1948, 1949, 1951, 1952, 1953, and 1955.
Mr. WRIGHT. Correct.
We have invested in transmission line, Government-owned transmission line—$24,900,170. This took us up to the fiscal year in which we are now operating.

APPROPRIATIONS, OBLIGATIONS AND CARRYOVERS

DEPARTMENT OF THE INTERIOR, SOUTHWESTERN POWER ADMINISTRATION

Appropriations and carryover balances, obligations and estimated savings for fiscal year 1956

OPERATION AND MAINTENANCE

1956 appropriation	$1,250,000
Estimated obligations	1,050,000
Estimated savings	200,000

CONSTRUCTION

Carryover balance, 1956	1,389,612
Transfer to surplus	189,612
Balance available for obligation	1,200,000
Estimated obligations	240,000
Estimated carryover balance, 1957	960,000

CONTINUING FUND

1956 appropriation	6,000,000
Estimated obligations	5,350,000
Estimated savings	650,000

Construction—Estimated obligations of carryover funds for fiscal year 1957

Lindsay-Anadarko line	$30,000
Springfield Substation	300,000
System communication and dispatching	100,000
Metering	90,000
Miscellaneous construction	330,000
Substations and switching stations	[1] 50,000
General plant and equipment	25,000
Administrative and engineering overhead	35,000
Total	960,000

[1] Minor additions to existing substations and switching stations.

Mr. WRIGHT. The third tabulation reflects the program for 1956 under the operation and maintenance appropriation of $1,250,000. Included in that was $250,000 to pay the maintenance and operation cost of G. and T. co-ops until their contracts were amended. We estimate we will expend $1,050,000 in 1956, or that we will have a saving of $200,000.

In the construction appropriation, we had a carryover balance unexpended last year of $1,389,612. We have transferred to surplus $189,612 and estimate we will obligate during the year 1956 $240,000. That leaves us a carryover balance in the construction fund this year of $960,000.

The second page of that tabulation will indicate the estimated use of that construction money, which are uses for which it was originally

appropriated, but the use of which we have not been able to develop under our contractual arrangements and service of power have not fully developed to where we need it.

Mr. CANNON. When do you expect that to be?

Mr. WRIGHT. I have been praying to get it spent every year; but due to changes in the form of our operation and changes in our funds, my guess is we will be about a year to a year and a half on expending the rest of the construction money which we have had ever since 1953. I believe we have had no appropriation since that time.

Mr. CANNON. Is there anything in this tabulation we have disapproved?

Mr. WRIGHT. No, sir. We have returned funds on a great deal of the things you have approved, which we no longer needed.

Mr. CANNON. You have not been skimping on the amount actually required?

Mr. WRIGHT. That is correct. We made other arrangements and found certain expenditures in excess of those required and did not make them when we found that to be so.

The continuing fund you provided last year in the amount of $6 million, the estimated obligations against that continuing fund are $5,350,000. It appears we will have a saving of $650,000 of the continuing fund.

Mr. CANNON. You list this as $550,000; but in the tabulation you just submitted you list it as $650,000. What is the reason for the discrepancy?

Mr. WRIGHT. This tabulation is naturally the last estimate I have had prepared and we estimate we have saved approximately $100,000 which is an indicated saving since the tabulation was prepared.

Mr. CANNON. So there has been an increase, then, of $100,000?

Mr. WRIGHT. Yes, sir.

Mr. CANNON. Since the last estimate was prepared, which was some time last fall, as I recall.

Mr. WRIGHT. That is correct.

1957 BUDGET REQUEST

Now the change in the money we asked you to give us last year and the money we requested this year, briefly is this: We are asking for $1 million for maintenance and operation, and the decrease is $250,000 that we do not require for payment of maintenance and operation cost of G. and T., that being handled under the continuing fund in this budget. The continuing fund request is increased from $6 million to $6.4 million by virtue of the fact that additional items are coming into play under the lease-operating agreement, and the maintenance and operation cost of these systems has increased as those items are expanded.

Mr. CANNON. That does not necessarily mean increased prices?

Mr. WRIGHT. It means the amount of leases in operation this year that were not in operation last year.

Mr. CANNON. So you have something to show for every increase?

Mr. WRIGHT. That is correct. And actually, as I will point out a little later on in my testimony, that may be not required if we complete the amendment of the contracts as Congress directed.

POWER SALES

So that the committee will know the things we have done with the Government power we are in charge of disposing of, and in order that the many charges and many claims about the disposition of power by Southwestern may be completely understood, I have prepared for the committee a complete tabulation which lists the disposition of every kilowatt of electric power ever generated or sold by Southwestern since the time our operation started.

Mr. CANNON. That is for 10½ years.

Mr. WRIGHT. Yes, sir. The first sheet shows that we have had a total hydroelectric power and energy of 5,513,720,000 kilowatt-hours.

Mr. CANNON. This was hydroelectric power?

Mr. WRIGHT. Yes.

Mr. CANNON. For which the revenue received was $26,468,700.

Mr. WRIGHT. That is correct. Included in that is 1,514,934,000 kilowatt-hours of secondary power, or in excess of 4 billion kilowatt-hours of primary electric power for which we received $24,609,800, or an average rate of 6.15 mills per kilowatt-hour.

Then we purchased power in the amount of 594,116,000 kwh——

COST ALLOCATION

Mr. CANNON. Before you leave that, you consider this 6.15 mills as an adequate price?

Mr. WRIGHT. I do not, with the cost imposed upon the Southwestern Power Administration, and with the allocations of cost and the amortization requirements imposed upon it.

Mr. CANNON. Are those allocations imposed upon you equitable, or do you think there might be some question as to the necessity for an increase?

Mr. WRIGHT. Under the allocation formula which has been adopted by the Department of the Interior, the Secretary of the Army, and the Federal Power Commission, the allocations of power cost imposed upon us are computed in my judgment within reasonable accuracy under that formula, but we have felt the method of allocation used should be the incremental method with an amortization period of 100 years instead of 50 years.

Mr. CANNON. How was that formula adopted?

Mr. WRIGHT. It was adopted by agreement of the Department of the Interior, the Department of the Army, and the Federal Power Commission, I believe at the Secretary level.

Mr. CANNON. You had no opportunity to make any representation?

Mr. WRIGHT. The Department of the Interior had been toying with adopting some fixed and standard cost-allocation formula for a number of years and a so-called separable cost remaining benefits formula was started in process of consideration back in 1946, I believe—perhaps even earlier.

When the activity with respect to cost allocation in our studies became activated shortly after 1953 by the Department, representatives from the Southwestern Power participated on a number of committees studying varying forms of cost allocation and various methods of cost allocation. We did have an opportunity to present our views.

Mr. CANNON. But your views did not coincide with the final decision?

Mr. WRIGHT. I think that is evident they did not; yes sir.

Mr. CANNON. You know it has been difficult sometimes to reconcile the decisions of the Department of the Interior, with the benefit and welfare of the consumers. Is it possible this is one instance in which they did not have in mind the objective of providing for the consumer the most power at the most reasonable cost?

Mr. WRIGHT. I have no way of knowing what they had in mind; but working with those people it is my judgment that, whatever opinion they followed, they followed in good faith within their own line of thinking. Because a man disagrees with me does not make me suspect that he necessarily has a motive of some kind or another. I try to persuade him, and when I do not persuade him, I obey orders.

Mr. CANNON. It is not fair to ask you a question like that, and the committee appreciates the frankness of your reply.

The committee at this time is investigating the methods and sources used by which they arrived at this decision. This formula does increase materially the cost to the average consumer?

EFFECT OF REDUCING AMORTIZATION PERIOD

Mr. WRIGHT. The change in allocations of power and the adoption of a 50-year amortization period in lieu of a 100-year amortization period results in increased financial obligation on Southwestern Power of $2,219,000 a year, or an average increase in our rates from about 5.6 to 7.71 mills.

Mr. CANNON. I had no idea it was that serious. Now where does this additional fund which seems to be in excess of what is a fair price for power to the ultimate consumer—this additional amount Southwestern is required to pay—where is that additional amount to be allocated? What becomes of it?

Mr. WRIGHT. The additional cost requirement results in a change in allocation from about $122 million on which the original A rate was based, to about $200 million under the revised cost allocation agreement. And the additional cost, because of the shorter amortization period, is about $1,200,000 a year. So, between the two, you have a shorter amortization period increasing the annual financial obligations $1,200,000, and you have a cost allocation increasing it approximately $1 million, a total of about $2.2 million.

Mr. CANNON. So it is necessary to cut in half the period of amortization. The original plan was adopted after long, careful, and expert consideration. It was decided eventually there should be about 100 years for amortization. Why should that suddenly be cut down to 50 years?

Mr. WRIGHT. I assume because they thought that 100 years was too long a period for amortization to be allowed on a project of this character. I cannot answer why they did it; I do not know.

Mr. CANNON. The situation and the financial setup in which you found yourself did not make it imperative that they reduce the period of amortization?

Mr. WRIGHT. The only "imperative" in my judgment, between the two periods of amortization, is to be sure you get it paid off while it still has useful life.

USEFUL LIFE OF PROJECTS

Mr. CANNON. Would the useful life extend beyond 50 years?

Mr. WRIGHT. I have testified before 4 committees of the Congress this year that in my judgment there is not a project in the Southwestern Power Administration area that has a useful life of less than 150 years; that the projects kept up and replaced in a transmission-line system will have an 85-percent usefulness at the end of any period.

Mr. CANNON. On that computation, then, Mr. Wright, they could have well increased the amortization period to 150 years instead of reducing it to 50 years and, thereby, could have justly reduced the cost to the consumer to that extent?

Mr. WRIGHT. I think that would be possible to increase the amortization life of the project and still stay within the useful life of it.

Mr. CANNON. So to have retained the formula originally adopted, amortization in 100 years, which was mainly a compromise between courses of 50 years and 150 years——

Mr. WRIGHT. I do not know what kind of a course it was; all I know was that the Southwestern Power Administration did fall into that period. We had adopted and utilized 100 years as the pay-out program. That had never been agreed to by the Federal Power Administration; they opposed it all the time and it was pointed out to Congress continuously by the Comptroller General and in a number of hearings that it was decidely a matter of controversy between the Army engineers, the Department of the Interior, and the Federal Power Commission both on the period of amortization and cost allocation.

Mr. CANNON. Which of those agencies insisted on a period of 100 years and which insisted on a period of 50 years?

Mr. WRIGHT. As far as I know, the Southwestern Power Administration was the agency, acting through the Department, which asked for 100 years; and, so far as I know, nobody else agreed with us.

Mr. CANNON. Neither the Army engineers nor the Federal Power Commission?

Mr. WRIGHT. Right.

Mr. CANNON. But they could not base that change upon the fact that the life of the utility was less than 100 years?

Mr. WRIGHT. That is correct.

Now, Mr. Chairman, I would like to proceed, because I think this is an extremely important tabulation. I think the members of the committee should be interested in this.

PURCHASE AND SALE OF POWER

Mr. TABER. I notice there is one item you did not fill in on the purchase power cost.

Mr. WRIGHT. I want to touch on that. We purchased 594,116,000 kilowatt-hours of power. That gave us firm power sales of 4,592,902,000 kilowatt-hours, which is in excess of the firm power produced by the hydroelectric project, but slightly less than the total power produced by all projects. The result of all this activity shows two striking things to me. One was that the power sales to power companies, outside of the aluminum contract, brought the average rates to 6.54

mills—all we have ever made. The aluminum contract sales was at 5.2 mills; sales to preferred customers have been at the average rate of 5.48 mills; average sales to all companies was at the rate of 6.27 mills.

I want to point out to you that during a number of years of those sales to companies there were no lines. We had only one unit for generation; we did not have firm capacity in any sense of the word and we sold those companies during wartimes at rates which, in my judgment, were fair and reasonable to the Government, and the companies that have dealt with the Government and the Southwest Power Administration in the purchase of this power are to be complimented on the rates which they have granted the Government in my judgment. When we get into a position where we have integrated projects and lines and deal with companies on exchange contracts—and I do not consider we have any wheeling contracts; we pass title to the power where it is produced in one system and take title to other power where they furnish it to us—for example, with the Oklahoma companies, they do not get any power from the Government except as compensation for power they have delivered to the Government; the power is exchanged, not wheeled; it is not the same power; it may not even be at the same time. For example, I do not run any generators on Saturday and Sunday and have 1,650,000 people served with power from the Government and they use it on Saturday and Sunday.

Mr. CANNON. It is power that is fed into the system which one buys and takes it at this point?

Mr. WRIGHT. Not the same power. We take the power out where we need it.

Mr. CANNON. It is fed into a pool of power?

Mr. WRIGHT. That is correct. To show you what we did under these company contracts on that exchange, I have listed on the pages in this tabulation each individual contract, and if you will look at the third page of the tabulation, which is the Texas Power & Light Co. contract, under that contract over all the years——

Mr. CANNON. The Texas Power & Light Co. is a private utility?

Mr. WRIGHT. That is correct. Over all of the years, we have delivered in Texas a total of 347 million kilowatt-hours to preference customers, consisting entirely of REA's. That is the fourth figure down in the last column. We have delivered to the Texas Co. 437 million kilowatt-hours, or about one-third more hours than we got back for preferred customers, the reason being that the Government did not have any preferred customers for about 5 years down there, and we had to make contracts. When we get all through with it here is what happened: You got an average return out of the power delivered annually of 8.26 mills per killowatt and the preference customers only paid 5.49 mills for the power they got, which is an exchange advantage to the Government under the Texas contract, and I think a very good advantage.

The next page shows the sales to Oklahoma companies before we had an exchange contract.

Mr. CANNON. Before you leave the Texas Co.: You had ample supplies for your customers which were entitled to prior rights; you did not deny any demand having a priority in order to supply this power to the Texas Power & Light Co.?

Mr. WRIGHT. We not only did not deny any; but last year we got caught with our pants down there with the drought and the company

agreed to defer their energy take and give me electric power and for me to pay it back when I had the water to do so.

Mr. CANNON. That is the Texas Co.?

Mr. WRIGHT. That is correct.

Mr. CANNON. That was very considerate of them.

Mr. WRIGHT. And instead of having a crystal ball, they have now amended the contract so that when I have a critical water year, when we get into a critical water year they are going to reduce the take from about 200 kilowatt-hours a month to 150.

Mr. CANNON. So the amount, then, you have supplied the Texas Power & Light Co. during the term of their contract has not in any way limited the amount you supplied at the demand of those having priority rights?

Mr. WRIGHT. That is correct.

In the case of the Oklahoma contract, which is the fifth page of the tabulation, the net result of that operation is that we had a return from the Government power of 6.93 mills per kilowatt-hour and we charged the preferred customers 5.57 mills per kilowatt-hour. That is the financial rate accorded to the Government through the exchange.

The other contracts list the power that was sold under other arrangements directly to the Southwestern Gas & Electric Co. and shows a similar situation.

With that in your record, gentlemen of the committee, you will know what the Southwestern Power has done with every unit of Government property it ever disposed of, and I would like to see that inserted in the record.

Mr. CANNON. Without objection, that will be inserted at this point in the record.

(The matter referred to follows:)

Total kilowatt-hours sales and revenue, fiscal year 1945, through 1st 6 months of fiscal year 1956

	Kilowatt-hours	Revenue	Mills per kilowatt-hours average on Government transmission grid
Total hydroelectric power and energy sales	5,513,720,000	$26,468,700	
Less secondary hydroelectric sales	1,514,934,000	1,858,900	1.23
Total hydroelectric primary sales	3,998,786,000	24,609,800	6.15
Purchased power	594,116,000		
Total all firm sales	4,592,902,000	27,192,500	5.92
Total sales to preferred customers, firm	2,051,899,000	11,253,500	5.48
Total sales to companies, firm	2,541,003,000	15,939,000	6.27
Less aluminum-contract sales, firm	502,346,900	2,612,200	5.20
Total other company sales, firm	2,038,656,100	13,326,800	6.54

Summary of sales to Texas Power & Light Co. previous to Contract No. 177

	Fiscal year 1944	Fiscal year 1945	Fiscal year 1946	Fiscal year 1947	1st month, fiscal year 1948	Total
	Kilowatt-hours					
Hydro energy to company:						
Primary energy	0	42,480,784	112,190,377	127,524,500	1,429,000	283,624,661
Secondary energy	1,032,112	52,377,642	114,584,123	109,376,500	0	277,370,377
Total	1,032,112	94,858,426	226,774,500	236,901,000	1,429,000	560,995,038
	Dollars					
Revenue:						
Primary energy	0	224,177.57	560,951.89	637,622.50	7,135.36	1,429,887.32
Secondary energy	2,326.07	62,401.83	132,602.53	123,253.75	0	320,584.18
Total	2,326.07	286,579.40	693,554.42	760,876.25	7,135.36	1,750,471.50
	Average rate, mills per kilowatt-hour					
Primary energy	0	5.28	5.00	5.00	4.99	5.04
Secondary energy	2.25	1.19	1.16	1.13	0	1.16

Summary of total sales under Texas Power & Light Co. Contract No. 177

	Fiscal year 1948	Fiscal year 1949	Fiscal year 1950	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955 [1]	1st 6 months, fiscal year 1956	Total contract	Total fiscal year 1950 through 1st 6 months, fiscal year 1956
	Kilowatt-hours										
Hydro energy to company:											
Primary	120,000,000	120,000,000	77,665,500	69,509,700	71,095,800	62,805,910	77,282,900	43,368,000	35,638,000	677,365,810	437,365,810
Secondary	31,837,000	31,357,000	25,138,000	111,767,300	22,086,200	----------	26,963,000	16,016,000	23,620,000	288,784,500	225,590,500
Total energy	151,837,000	151,357,000	102,803,500	181,277,000	93,182,000	62,805,910	104,245,900	59,384,000	59,258,000	966,150,310	662,956,310
Continuous available energy from company to Government customers	3,195,658	16,876,769	21,551,563	32,178,798	51,844,883	57,382,167	65,293,104	74,228,287	44,829,827	367,381,056	347,308,629
	Dollars										
Revenue:											
Texas Power & Light Co.:											
Gross total energy	704,193.52	708,000.00	623,133.33	624,000.00	624,000.00	624,000.00	624,000.00	501,840.00	312,000.00	5,345,166.85	3,932,973.33
Less secondary	39,796.25	39,196.25	31,422.50	139,709.12	27,607.75	----------	33,703.75	20,020.00	29,525.00	360,980.62	281,988.12
Gross primary energy	664,397.27	668,803.75	591,710.83	484,290.88	596,392.25	624,000.00	590,296.25	481,820.00	282,475.00	4,984,186.23	3,650,985.21
Less purchased power	18,590.99	97,379.83	125,502.33	181,662.46	289,143.10	321,595.15	364,053.41	409,915.59	252,586.89	2,060,429.75	1,944,458.93
Net revenue before wheeling	645,806.28	571,423.92	466,208.50	302,628.42	307,249.15	302,404.85	226,242.84	71,904.41	29,888.11	2,923,756.48	1,706,526.28
Government customers	18,261.58	96,005.83	122,517.48	180,406.51	283,892.97	318,485.68	358,325.83	400,458.37	242,762.89	2,021,117.14	1,906,849.73
Total revenue for primary energy on Government transmission grid	664,067.86	667,429.75	588,725.98	483,034.93	591,142.12	620,890.53	584,568.67	472,362.78	272,651.00	4,944,873.62	3,613,376.01
Less wheeling charges	None	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
Total revenue for primary energy delivered to Government customers and retained by company	664,067.86	667,429.75	588,725.98	483,034.93	591,142.12	620,890.53	584,568.67	472,362.78	272,651.00	4,944,873.62	3,613,376.01

See footnotes at end of table, p. 84.

Summary of total sales under Texas Power & Light Co. Contract No. 177—Continued

	Fiscal year 1948	Fiscal year 1949	Fiscal year 1950	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955 [1]	1st 6 months, fiscal year 1956	Total contract	Total fiscal year 1950 through 1st 6 months, fiscal year 1956
	Mills per kilowatt-hour										
Average rate per kilowatt-hour received for primary energy on Government transmission grid	5.53	5.56	7.58	6.95	8.31	9.89	7.56	10.89	7.65	7.30	8.26
Average rate per kilowatt-hour company paid for primary energy retained [2]										9.43	18.95
Average rate per kilowatt-hour paid by Government customers	5.71	5.69	5.68	5.61	5.48	5.55	5.49	5.39	5.42	5.50	5.49
Rate per kilowatt-hour received for secondary energy	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

[1] Company deferred and did not pay for 25,450,000 kilowatt-hours primary energy.

[2] Line 9 divided by line 1 minus line 4.

Texas contract

Present contract: 50 percent load factor.		
To Government per month:		
Firm energy	kilowatt-hours	7, 300, 000
Capacity	kilowatts	20, 000
Delivered at load centers.		
To company per month:		
Average contract energy	kilowatt-hours	5, 833, 333
Capacity	kilowatts	35, 000
Average secondary energy	kilowatt-hours	5, 300, 000
Delivered at Payne Substation.		
Payment to Government:		
Total per month		$52, 000
Secondary energy ($0.0015 per kilowatt-hour)		7, 950
For contract energy and capacity		44, 050
Payment to company:		
20,000 kilowatts at $1.55		31, 000
2,300,000 kilowatt-hours at $0.004		9, 200
Total		40, 200
Net balance to Government		3, 850
Value per kilowatt retained by company per month [1]		[1], 2567

[1] In addition to a monetary compensation of $0.2567 per kilowatt of capacity without energy, the company further compensates the Government by providing for the Government's use, without charge, its transmission system for delivery of power for the Government's account and the entire cooperative load in its service area as a market for the Government.

Summary of sales to Oklahoma Utility Companies previous to Contract No. 356

	Fiscal year 1945	Fiscal year 1946	Fiscal year 1947	Fiscal year 1948	Fiscal year 1949	Fiscal year 1950	1st 9 months fiscal year 1951	4 months fiscal year 1953	Total
	Kilowatt-hours								
Hydro energy to companies:									
Primary energy	4,418,000	11,678,000	7,153,000	12,333,000	14,051,000	60,668,528	53,341,920	0	163,643,448
Secondary energy	2,391,000	6,106,000	3,543,000	0	0	0	0	22,751,484	34,791,484
Total	6,809,000	17,784,000	10,696,000	12,333,000	14,051,000	60,668,528	53,341,920	22,751,484	198,434,932
	Dollars								
Revenue:									
Primary energy	24,318.00	58,390.00	35,765.00	79,073.00	89,322.00	405,390.48	359,117.65	0	1,051,376.13
Secondary energy	2,994.28	6,659.50	3,543.00	0	0	0	0	22,751.49	35,948.27
Total	27,312.28	65,049.50	39,308.00	79,073.00	89,322.00	405,390.48	359,117.65	22,751.49	1,087,324.40
	Mills per kilowatt-hours								
Average rate:									
Primary energy	5.50	5.57	5.00	6.41	6.36	6.68	6.73	0	6.42
Secondary energy	1.25	1.09	1.00	0	0	0	0	1.00	1.03

Summary of total sales under Oklahoma companies contract No. 356

Summary of total sales under Oklahoma companies contract No. 356

	Last 3 months, fiscal year 1951	Fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955	1st 6 months, fiscal year 1956	Total, contract 356
	Kilowatt-hours						
Hydro energy to companies:							
Primary	7,364,556	43,579,455	70,684,401	93,700,349	[1] 112,363,000	[2] 56,835,600	384,527,361
Secondary	11,678,537	12,616,814	23,666,968	19,664,900	7,609,100	8,494,800	83,731,119
Total energy	19,043,093	56,196,269	94,351,369	113,365,249	119,972,100	65,330,400	468,258,480
Continuous available energy from companies to Government customers	2,746,200	44,721,072	80,394,860	109,331,313	125,778,081	63,485,914	426,457,440
	Dollars						
Revenue:							
Oklahoma companies:							
Gross total energy	62,748.65	76,619.52	116,712.79	216,300.67	68,246.54	66,203.01	606,831.18
Less secondary	14,598.17	15,771.02	29,583.71	24,581.12	9,511.38	10,618.50	104,663.90
Gross primary energy	48,150.48	60,848.50	87,129.08	191,719.55	58,735.16	55,584.51	502,167.28
Less purchased power		7,108.92	38,841.84	70,709.99	68,084.96	26,601.25	211,346.96
Net revenue before wheeling	48,150.48	53,739.58	48,287.24	121,009.56	−9,349.80	28,983.26	290,820.32
Government customers	16,587.47	251,819.73	444,954.20	601,312.85	696,916.81	362,779.62	2,374,370.68
Total revenue for primary energy on Government transmission grid	64,737.95	305,559.31	493,241.44	722,322.41	687,567.01	391,762.88	2,665,191.00
Less wheeling charges	3,432.75	55,901.34	100,493.59	136,664.16	157,222.61	79,357.40	533,071.85
Total revenue for primary energy, delivered to Government customers and retained by companies	61,305.20	249,657.97	392,747.85	585,658.25	530,344.40	312,405.48	2,132,119.15
	Mills per kilowatt-hour						
Average rate per kilowatt-hour received for primary on Government transmission grid	8.79	7.01	6.98	7.71	6.12	6.89	6.93
Average rate per kilowatt-hour companies paid forjprimary energy retained						[3]	
Average rate per kilowatt-hour Government customers paid	6.04	5.63	5.53	5.50	5.54	5.71	5.57
Average rate per kilowatt-hour received for secondary energy	1.25	1.25	1.25	1.25	1.25	1.25	1.25

[1] Includes sales of 27,426,100 kilowatt-hours primary energy paid for but deferred as to delivery at end of year.

[2] At end of December 1955, 3,181,600 kilowatt-hours primary energy previously paid for remained yet to be delivered to companies.

[3] None retained.

Summary of sales to Southwestern Gas & Electric Co. previous to Contract No. 396

	Last 2 months, fiscal year 1950	1st 7½ months, fiscal year 1951	Total
	Kilowatt-hours		
Hydro energy to company:			
Primary energy	0	12, 912, 350	12, 912, 350
Secondary energy	3, 058, 270	2, 455, 330	5, 513, 600
Total	3, 058, 270	15, 367, 680	18, 425, 950
	Dollars		
Revenue:			
Primary energy	0	86, 803. 63	86, 803, 63
Secondary energy	3, 822. 84	3, 069. 17	6, 892. 01
Total	3, 822. 84	89, 872. 80	93, 695. 64
	Mills per kilowatt-hour		
Average rate:			
Primary energy	0	6. 72	6. 72
Secondary energy	1. 25	1. 25	1. 25

Summary of sales under Southeastern Gas & Electric Co. Contract No. 396

	Last 4½ months, fiscal year 1951	Fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955	1st 6 months, fiscal year 1956	Total, contract 396
	Kilowatt-hours						
Hydro energy to company:							
Primary	6,457,000	17,218,690	17,218,690	17,218,690	17,218,690	14,728,960	90,060,720
Secondary	7,394,700	24,265,560	30,163,140		11,590,710		73,414,110
Total energy	13,851,700	41,484,250	47,381,830	17,218,690	28,809,400	14,728,960	163,474,830
Continuous available energy from Company to Government customers		6,207,906	19,265,500	21,247,290	23,196,498	12,198,880	81,116,074
	Dollars						
Revenue:							
Southwestern Gas & Electric Co:							
Gross total energy	76,392.86	200,322.58	207,000.00	207,000.00	207,000.00	103,500.00	1,001,215.44
Less secondary	9,243.37	30,331.95	37,703.93		14,488.39		91,767.64
Gross primary energy	67,149.49	169,990.63	169,296.07	207,000.00	192,511.61	103,500.00	909,447.80
Less purchased power		34,365.62	106,096.00	117,564.36	128,585.59	66,832.72	453,444.29
Net revenue before wheeling	67,149.49	135,625.01	63,200.07	89,435.64	63,926.02	36,667.28	456,003.51
Government customers		33,059.07	103,363.55	114,535.16	124,620.54	65,056.27	440,634.59
Total revenue at Government bus	67,149.49	168,684.08	166,563.62	203,970.80	188,546.56	101,723.55	896,638.10
Less wheeling charge		4,871.80	12,000.00	12,000.00	12,000.00	6,000.00	46,871.80
Total revenue for primary energy, delivered to Government customers and retained by company	67,149.49	163,812.28	154,563.62	191,970.80	176,546.56	95,723.55	849,766.30
	Mills per kilowatt-hour						
Average rate per kilowatt-hour received for primary energy at Government bus	10.40	9.80	9.67	11.85	10.95	6.90	9.96
Average rate per kilowatt-hour company paid for primary energy retained							50.98
Average rate per kilowatt-hour paid by Government customers		5.32	5.37	5.39	5.37	5.33	5.43
Rate per kilowatt-hour received for secondary energy	1.25	1.25	1.25	1.25	1.25	1.25	1.25

Summary of total sales to preference customers served direct by Southwestern Power Administration

	Fiscal year 1950	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953	Fiscal year 1954	Fiscal year 1955	1st 6 months, fiscal year 1956	Total
Kilowatt-hour sales:								
Generation and transmission cooperatives (except Whitney)....kilowatt-hours	1,016,099	23,760,527	39,485,000	58,957,558	164,430,145	209,938,245	311,496,731	809,084,305
Other preference customers....do	853,524	15,552,097	19,166,200	23,264,361	77,597,835	114,517,690	69,759,919	320,711,626
Total....do	1,869,623	39,312,624	58,651,200	82,221,919	242,027,980	324,455,935	381,256,650	1,129,795,931
Revenue:								
Generation and transmission cooperatives (except Whitney)....dollars	6,104.72	131,083.81	208,378.60	320,609.65	923,089.24	1,132,354.95	1,668,227.97	4,389,848.94
Other preference customers....do	5,127.96	89,928.39	106,420.90	126,683.25	428,542.67	629,281.90	370,769.80	1,756,754.87
Total....do	11,232.68	221,012.20	314,799.50	447,292.90	1,351,631.91	1,761,636.85	2,038,997.77	6,146,603.81
Average rate....mills per kilowatt-hour	6.01	5.62	5.37	5.44	5.58	5.43	5.35	5.44
Purchased power (generation and transmission):								
Purchase....kilowatt-hours					56,204,137	175,157,357	239,834,342	471,195,836
Amount....dollars					294,051.98	1,100,318.59	1,489,849.44	2,884,220.01
Average cost....mills per kilowatt-hour					5.23	6.28	6.21	6.12
Service charge (generation and transmission): Amount dollars				1,817.51	357,271.59	485,160.81	24,079.80	868,329.71
Lease payments (generation and transmission):								
Amortization....do							689,891.07	689,891.07
Administration....do							114,536.08	114,536.08
Total....do							804,427.15	804,427.15
Operation and maintenance (generation and transmission):								
Operation....dollars							83,669.73	83,669.73
Maintenance....do							50,778.92	50,778.92
Replacements....do							421.68	421.68
Total....do							134,870.33	134,870.33
Whitney Dam project: [1]								
Sales....kilowatt-hours					19,747,012	29,717,848	29,894,706	79,359,566
Revenue....dollars					24,683.76	65,829.56	220,500.00	311,013.32
Average rate....mills per kilowatt-hour					1.25	2.22	7.38	3.92

[1] Power and energy generated at Whitney Dam project prior to June 1, 1955, was incidental to release of water for testing and downstream water uses and sold accordingly.

Summary of total sales to Arkansas Power & Light Co. (except aluminum contract)

Summary of total sales to Arkansas Power & Light Co. (except aluminum contract)

	June 1944	Fiscal year 1945	Fiscal year 1946	Fiscal year 1947	Fiscal year 1948	Fiscal year 1949	Fiscal year 1950	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953	1st 6 months fiscal year 1954	Total
	Kilowatt-hours											
Hydro energy to company:												
Primary		45,958,174	76,115,300	110,487,009	125,009,000	146,595,709	157,509,785	120,101,082	154,995,507	129,874,278	112,000,000	1,178,555,826
Secondary	[1] 2,632,000	52,317,150	100,401,000	88,061,009	16,939,000	38,972,900	105,309,863	45,849,576	127,670,730	105,898,250		684,051,469
Total energy	2,632,000	98,275,324	176,516,300	198,548,000	141,948,009	185,478,609	262,819,648	165,950,658	282,666,237	235,772,528	112,000,000	1,862,607,295
	Dollars											
Revenue:												
Primary		259,672.36	379,425.39	519,949.60	710,177.72	817,022.80	866,539.14	777,404.32	1,014,600.53	971,217.31	756,000.00	7,072,009.17
Secondary	[1] 6,183.60	61,395.49	116,959.59	136,085.52	16,939.00	48,161.38	131,637.34	57,311.97	159,588.42	119,709.56		853,971.87
Total	6,183.60	321,067.85	496,384.98	656,035.12	727,116.72	865,184.18	998,176.48	834,716.29	1,174,188.95	1,090,926.87	756,000.00	7,925,981.04
	Mills per kilowatt-hour											
Average rate:												
Primary		5.65	4.98	4.71	5.68	5.58	5.50	6.47	6.55	7.48	6.75	6.00
Secondary	2.35	1.17	1.16	1.55	1.00	1.24	1.25	3.45	1.25	1.13		1.25

[1] Testing and emergency power and energy.

Summary of total sales under Arkansas Power & Light Co. aluminum contract

	Last 6 months, fiscal year 1954	Fiscal year 1955 [1]	First 6 months fiscal year 1956	Total
	Kilowatt-hours			
Hydro energy to company:				
Primary	180, 000, 000	142, 346, 900	180, 000, 000	502, 346, 900
Secondary	3, 061, 300	22, 932, 000	6, 695, 000	32, 688, 300
Total	183, 061, 300	165, 278, 900	186, 695, 000	535, 035, 200
	Dollars			
Revenue:				
Primary	936, 000. 00	740, 203. 88	936, 000. 00	2, 612, 203. 88
Secondary	3, 826. 63	28, 665. 00	8, 368. 75	40, 860. 38
Total	939, 826. 63	768, 868. 88	944, 368. 75	2, 653, 064. 26
	Mills per kilowatt-hour			
Average rate:				
Primary	5. 20	5. 20	5. 20	5. 20
Secondary	1. 25	1. 25	1. 25	1. 25
	Kilowatt-hours			
Company to Reynolds Metals Co	390, 917, 000	953, 100, 000	481, 716, 000	1, 825, 733, 000

[1] 217,653,100 kilowatt-hours deferred as to purchase and delivery.

Oklahoma contract

EXCHANGE UNDER PRESENT RATES: 50 PERCENT LOAD FACTOR

To Government:	
Power and energy:	
Kilowatt-hours	365
Kilowatts	1
Delivered at multiple delivery points at load centers.	
To companies:	
Power and energy:	
Kilowatt-hours	330
Kilowatts	1. 65
Delivered highside main grid.	
Payments to companies:	
35 kilowatt-hours at $0.004	$0. 14
365 kilowatt-hours at $0.00125	. 45625
Total	. 59625
Payments to Government: 0.15 kilowatt at $1.15	0. 1725
Net balance to companies	. 42375

EXCHANGE UNDER SUGGESTED REVISED RATES: 50 PERCENT LOAD FACTOR

Suggested revised rates:		
Demand charge	$1.25 per kilowatts per month.	
Energy charge	4 mills per kilowatt-hour.	
Service charge by companies	3 mills per kilowatt-hour.	
To Government:		
Kilowatt-hours		365
Kilowatts		1
Delivered at multiple delivery points at load centers.		
To companies:		
Kilowatt-hours		330
Kilowatts		1.65
Delivered highside main grid.		
Payments to companies:		
365 kilowatt-hours at $0.004		$1.46
1 kilowatt at $1.25		1.25
365 kilowatt-hours at $0.003		1.095
Total		3.805
Payments to Government:		
330 kilowatt-hours at $0.004		1.32
1.65 kilowatts at $1.25		2.0625
Total		3.3825
Net balance to companies		.4225

POWER SUPPLY AND DEMANDS

Mr. CANNON. You have at all times had ample power to supply legitimate demands?

Mr. WRIGHT. I have not, sir. Last year there was a reactivation of the generation and transmission cooperative contracts, under which a great deal of additional thermal power became available to the Government on a long-range basis and after amendment of the contracts with the companies, which contributed to my present ability to serve. Previously I had to advise the Government customers that we could not handle their load growth, and a number of them had to handle their load growth for about a year by contracting for extra power with companies with whom we have exchange power contracts.

Mr. CANNON. So this is an instance of the means Southwestern Power has taken to supply customers with the amount of power they required?

Mr. WRIGHT. That is correct, simply because we have utilized the entire capacity of all the hydroelectric dams, and we are following the policy now that we are taking additional load only in the case of load growth and only in the case of a dire emergency of the need of some power in areas until the Table Rock Dam comes into our system.

Mr. CANNON. And in the event you are not able to supply the full load, the curtailment is on the part of these companies which do not have priority, and those demands which are prior under the law are never reduced as long as they are furnishing something to other companies?

Mr. WRIGHT. That is correct. The companies have voluntarily agreed to reduce their take upon the Government in the event of a critical water situation and, if there is no critical water situation,

then we will be able to meet our power-supply requirements. In either event, the Southwestern Power Administration has made a reduction of 30 percent from its original estimated low water prior year by adjustments of its contracts both with the utilities and in the availability of thermal power generation in transmission contracts which have been recommended.

Mr. CANNON. What is your situation at this time? Do you have ample power to supply all requirements?

Mr. WRIGHT. Yes, sir. And I plan to place in the record the exact water situation of the Southwestern Power Administration, which has 49 percent of the total storage available. That is 10 percent below normal at this time of the year.

Mr. CANNON. Notwithstanding that deficit of 10 percent, you are still able to supply all demands at this time?

Mr. WRIGHT. That is correct. And if a critical situation develops, we advise the companies and they would curtail their take upon us for the full energy, and we would want to put a larger degree upon steam generation for the REA cooperatives. We would place more steam in the picture, run the overload and purchase power wherever available wherever we have contract customers to serve.

Mr. CANNON. At the same time, you do not expect in the near future any drastic reduction in your available power.

Mr. WRIGHT. No, sir.

Mr. CANNON. And when Table Rock power comes in, you will then be able to supply——

Mr. WRIGHT. Another 100,000 kilowatts of load.

Mr. CANNON. When do you expect that?

Mr. WRIGHT. That is scheduled for completion in 1959. I hope they will have it in commercial operation early in 1960.

Mr. CANNON. If you have enough power at the present time to supply all of your needs, how do you expect to dispose of this additional 100 percent which will come in as a result of the operation of the Table Rock Dam?

Mr. WRIGHT. The question is not one of disposition; the question is one of allocation. We are making contracts now under which the load growth of each of the present customers of the Government will be such that the total available from Table Rock will probably not handle their added needs. For example, as I am sure the chairman knows, the city of Springfield is building a 50,000-kilowatt steam generating plant. They are going to need additional capacity and they will utilize that with hydro as peaking power. And we encourage that wherever possible.

Mr. CANNON. They provide their own peaking power; you sell hydro power to them and they supply the thermal power?

Mr. WRIGHT. They supply their own base load and buy the peaking from us. They call on us a few hours a day for their peaking and run their thermal plant 24 hours a day.

NEED FOR ADDITIONAL POWER

Mr. CANNON. When you have completed Table Rock Dam, do I understand there is no further need of power production facilities in this territory, or do you anticipate increased loads that will make it possible to consume any amount that might be supplied?

Mr. WRIGHT. There is an almost unlimited need for peaking power in that area. As a matter of fact, the Union Electric Co. has already scheduled and is very actively proceeding with a plan of installation of 800,000 kilowatts of pump-back power which will have the only advantage of being able to take steam power at night and pump Mississippi water at night, where it will drop down in the daytime. This would provide 800,000 kilowatts of peaking power in the initial installation and it may be expected to be increased to 1,600,000 kilowatts ultimately. This compares to a total of 642,000 kilowatts in all our dams.

Mr. CANNON. Will that method of back-pumping serve the purpose as well and cheaply as the production of power through these dams?

Mr. WRIGHT. It will not: because they can only serve daily peaks by that method, not seasonal peaks. They cannot handle all of the seasonal demands. The Southwestern area has developed tremendous seasonal peaks in air-conditioning, and this air-conditioning is when cotton ginning and the cooling of milk occurs and with chickens through the brooder and everything else. We have a peak in July and August that sometimes is terrific. As a matter of fact, down there they work on temperatures.

Mr. CANNON. As a matter of fact, you are in a position to utilize any additional demands that could be made?

Mr. WRIGHT. The Southwest can absorb any hydroelectric power that Congress sees fit to provide. If you authorize the construction of a dam, by the time you can build the cam we can have it sold.

INDUSTRIALIZATION IN SPA AREA

Mr. CANNON. Does the availability of this enormous amount of power in your area, or has it in the past, historically encouraged and added to the industries in that area? Have new industries developed in that area which would have been impossible without the additional power which you supply?

Mr. WRIGHT. I do not think there is any question about that. I will go even further. We have had a sort of effect upon the Southwest like the setting off of an atom bomb or the putting of a catalytic agent in a chemical compound. The power companies down there have done much to foster industrial development in the last few years which they did not do before SPA entered the picture. In reality there is not much doubt of what is going to happen with respect to the power industry. Some companies are installing more steam capacity in 1 year than they had in 1947; so that we have had great effect down in this area. There is a tremendous record of the use of power.

Mr. CANNON. In industrialization?

Mr. WRIGHT. Yes, sir.

Mr. CANNON. The building of these dams, then, means increased industrialization, providing more jobs for labor, providing more products for the consumer, providing more taxes for the Government, and contributing in every way to the progress and prosperity of that section of the country and the country as a whole?

Mr. WRIGHT. That is correct, and I am a firm believer that as this country grows its biggest problem is water and that within a few years you are going to have to operate hydroelectric dams in the sum-

mertime, because you are going to need both water and power. I am a firm believer in the fact, that as fast as the Government can develop water resources within its financial resources that a dam ought to be put wherever a dam can be placed in this country.

Mr. CANNON. And the largest dam which the water supply would accommodate?

INCLUSION OF PRICING OF SERVICES IN CONTRACTS

Mr. WRIGHT. That is correct. We are going to need the water before we get the program built. The country cannot afford to build fast enough, in my judgment. There has been a great deal of criticism about the Oklahoma & Texas Co. contract, because of the fact we elected with the companies at the time we were negotiating those contracts not to price the services exchanged under them. We exchanged a mule for a cow and other things without a contract price.

Mr. CANNON. Was that an inefficient method?

Mr. WRIGHT. I do not believe so; because I think had we attempted to set a price on them, we would have become subject to factors and pressures in negotiations that should not have been on them at that time. However, the contracts are old enough now and the companies have had sufficient experience and pressures applied so we are now negotiating for the pricing of all of the services of the contracts.

I have a detailed tabulation which will indicate to the committee that had we priced every item of service in the contract the rate for power charged the companies could have been $1.25 per kilowatt month and 4 mills per kilowatt-hour, which is as high or higher than any rate any witness has testified should be charged for hydroelectric power in this area, to my knowledge. I will give you a rate schedule for the record which will indicate the existing level of those rates.

Mr. CANNON. In this case, however, you have testified that the more dams we build, the greater the prosperity of America, the more jobs, the more products, the higher standard of living, and the more revenue for the Government.

RATES

Will the utilization of those facilities be helped by a low rate for electric power?

Mr. WRIGHT. I think the rate should be as low as it can be and pay the cost of producing electric power and transmitting it and servicing it.

Mr. CANNON. The only standard, then, the only criteria, is the cost of production and distribution. The rate should be fixed solely by the cost of production and distribution, and no other factor should enter into it?

Mr. WRIGHT. That is correct, with this exception: When you are trading power or exchanging power or services with another utility company and not marketing power, then the relationship between you and the articles of exchange should bear some relationship to what the article is worth to each of you. And that is what is done in the company contracts. In other words, Mr. Wilkes testified before four congressional committees this year that the price for power should be $1.50 per kilowatt-month and 2 mills per kilowatt-hour. That is almost exactly the same rate as $1.25 per kilowatt-month

and 4 mills per kilowatt-hour. The lines are almost together. As a matter of fact, the rates which we feel are in the company contracts now, are those rates that reflect what the power or exchange is worth to the companies. We thought they were good deals for the Government when we got them, and good deals for the company. We think the Government used this good deal to help lower the total overall cost of dealing with the preference customers.

Mr. CANNON. So the objective in building these dams and administering Southwestern should be the production of the greatest amount of power at the lowest legitimate cost?

Mr. WRIGHT. Consistent with the other uses of water, and specifically using water for power as the last use you should make of it.

Mr. CANNON. You would not be building these dams and using water for power by curtailing any other use that might be made of this water, would you?

Mr. WRIGHT. Not only curtailing; but, if power interfered with any other use, then I think the use should be adjusted to permit the other use first.

PUBLIC AND PRIVATE POWER PRODUCTION AND DISTRIBUTION

Mr. CANNON. From your experience and observation, Mr. Wright, it seems to me you should know more about this subject than any other one man in America today. Do you think the best interests of the country would be served by giving the Government a monopoly of the production and distribution of electricity?

Mr. WRIGHT. I certainly do not, and I would not want to live in a country where that was so. I do not believe it should have been done in the whole State of Nebraska.

Mr. CANNON. Do you believe it would serve the best interests of the country if we gave private industry a monopoly?

Mr. WRIGHT. No, sir.

Mr. CANNON. But private utility and public utility should grow along side by side and supplement each other, merely having enough public power to serve as a yardstick?

Mr. WRIGHT. I do not think it needs to serve as a yardstick. I think it needs to be available to the people if they want to use it. And I am amazed to find that of all of the States in the Southwest, the conservative State of Kansas, agrees with me to the greatest extent on that subject, and we have more publicly owned electric power systems in towns of Kansas than in any other State in the Southwest.

Mr. CANNON. But in your judgment, in giving private industry a monopoly of the production and distribution of power, is it your opinion they would add anything when it came to making rates so that they would put those rates above the cost of distribution and production?

Mr. WRIGHT. I would like to answer that by saying if I were a private industry and had a monopoly, I would not.

Mr. CANNON. Unfortunately, there are not many men like you in control.

Mr. WRIGHT. I mean I would be just as tough as the utilities and maybe a little tougher.

Mr. CANNON. That is more realistic. You may proceed.

POWER STORAGE AND POTENTIAL ENERGY AVAILABLE

Mr. WRIGHT. The next item I would like to present for the record is a tabulation of the storage in reservoirs at this time, which indicates we have 49 percent of the total storage available and the number of kilowatt-hours we have in storage in the reservoirs down there.

(The matter referred to follows:)

DEPARTMENT OF THE INTERIOR, SOUTHWESTERN POWER ADMINISTRATION

Power storage and potential energy available as of Mar. 31, 1956

Project	Power storage		Potential energy [1]	
	Acre-feet	Percent of full Powerpool	Kilowatt-hours	Percent of full Power pool
Bull Shoals	1,142,500	55	150,300,000	50
Denison	872,400	49	60,800,000	42
Fort Gibson	8,120	15	423,000	15
Norfork	382,300	54	47,900,000	51
Tenkiller Ferry	130,100	38	13,300,000	36
Subtotal (Interconnected system)	2,535,420	51	272,723,000	47
Narrows	169,022	84	17,600,000	82
Whitney	120,600	92	9,220,000	91
Subtotal (Other plants)	289,622	87	26,820,000	85
Total	2,825,042	53	299,543,000	49

[1] Estimated at 85 percent efficiency. Potential energy storage is approximately 10 percent below average for this season of the year. No material decrease in purchased fuel generation is desirable until the reservoirs reach 75 percent of water storage capacity.

G & T CONTRACT AMENDMENTS

Mr. WRIGHT. I have one other statement I would like to make in connection with the money and that is this: The Congress directed, through committee reports last year, that the G. and T. contracts be amended in certain particulars, included among which was a balancing-off of accounts. In testimony before committees of the Senate I indicated my opinion that there was some doubt whether the Government could cancel the option to purchase or could balance out accounts and it would probably require a Comptroller General's decision.

These amendments were negotiated up to the point where that decision needed to be had, it was submitted to the Comptroller General, and he ruled that the amendment be made in balancing out accounts and in canceling the option to purchase. If you do that and the present A rate prevails——

Mr. CANNON. You personally agreed with that decision?

Mr. WRIGHT. I have no objection to it. It was purely a legal matter as to whether the Department had the authority to do it. There was no controversy, it was a question of authority.

Mr. CANNON. It was a matter of phraseology in the contract?

Mr. WRIGHT. Yes; and the Department had no controversy, just a matter of legal authority.

If we continue the present "A" rate during the coming fiscal year and did not balance out accounts, did not amend the contracts, we estimate now that we would require $6,919,000 to carry out all of the

G. and T. lease operating arrangements, including the Sho-Me Power Corp., during the coming year. We have not asked for any change in the $6,400,000 figure for 2 reasons. First, we know that Sho-Me is not coming into activation within the immediate future. They do not desire to, they are trying to negotiate another type of contract. It is their request.

Mr. CANNON. Off the record.

(Discussion off the record)

Mr. CANNON. Would you give us the amount?

AMOUNT NEEDED IN 1957 ON NET BALANCE SETTLEMENTS

Mr. WRIGHT. The budget estimates were prepared on a total financial requirement of the contracts not being amended during the fiscal year. We did not know whether they would be amended or whether the Comptroller General was going to let us amend them. Now he says he will let us amend them and we are in the process of working it out. If they are amended, instead of requiring $6,400,000 as in the estimate, we would not need but $4,103,000, which is almost $2,300,000 less.

I would like to leave that point open, Mr. Chairman, until we know the contracts are amended and until we are able to come up, if necessary, with the proper amendment to the budget through the Budget Bureau. But I did not want to appear before this committee without telling you that.

Mr. CANNON. Off the record.

(Discussion off the record.)

Mr. CANNON. You may continue.

Mr. WRIGHT. Mr. Chairman, that concludes the presentation I have of the financial picture of Southwestern Power Administration, of our disposition problem.

I would like to repeat this: That Southwestern's problem from now on will revolve mainly around a utilization of the facilities that Congress has provided in the past and the utilization of those facilities which Congress may see fit to provide in the future. We have the backbone grid, the only construction we will ever require will be short, strengthening links to this grid. G. and T. contracts represent a real marketing problem to us because they do not become economically desirable from a financial viewpoint until we at least double the present loads on those systems, at which time they will become, in my judgment, very good economic and feasible contracts.

We have been placed in this position. The Congress has built projects in the Southwest in which they provide for 5 units, but only put 1 in. From the start of the ball game we have had to carry a big shoe factory with one shoe machine. We had to start from scratch with no plan of transmission, no plan of distribution, and the private utilities in that country were properly alarmed at which direction the Government might proceed to go.

I, personally, as all of you know, have been visualized as everything from an obsessed young man—and I am not young any more, I have about ten more years of this and I am through—to anything else. I am one guy that believed that hydroelectric power and the private power company's power is the perfect marriage.

Mr. CANNON. The public cooperatives have the benefit of it and you think the private utilities should also furnish thermal power and collaborate with your hydropower?

Mr. WRIGHT. I think the private companies should also have the benefits of it to the extent it can be provided and get the job done. We have never planned arrangements in the Southwest which will enable us to market a greater number of kilowatt-hours or a greater capacity than the Government could provide from these hydroelectric dams. We did visualize arrangements that would take some of our secondary power and transform it into firm power by exchange, we visualized trading capacity for firm thermal energy, and visualized making trades so that people could live and let live, and under no stretch of the imagination in the Southwest could we ever handle more than 10 or 15 percent of the load. I have so testified to this committee for some 13 years.

Mr. CANNON. You think that private utilities should construct and own their own dams?

Mr. WRIGHT. Sure I do, if that is the best way to do it. I think each dam has to be studied on its own merits.

PUBLIC AND PRIVATE POWER PRODUCTION AND DISTRIBUTION

Mr. CANNON. You think that the public production and distribution of power should amount to about 15 percent of the total national production?

Mr. WRIGHT. I think in the Southwest, by virtue of the situation of God's resources, it should probably amount to about 10 percent of it and that means develop all of it.

Mr. CANNON. Why would that not be a good ratio nationally, 10 percent?

Mr. WRIGHT. Some places nationally you may have enough hydropower that you ought to develop 50 percent. I believe in the Pacific Northwest the major portion of the power in the Pacific Northwest is probably hydroelectric, even though a great deal of hydroelectric power may be privately owned.

Mr. CANNON. You think in that area the ratio between public and private utilities should be 50–50?

Mr. WRIGHT. Whatever hydropower would permit.

Mr. CANNON. There are areas in the United States in which the proportion should be less than 90–10, 90 for private utilities and 10 for the public utilities?

Mr. WRIGHT. Not where it should be, perhaps, but places where it must be because there is no hydroelectric power possible.

Mr. CANNON. Owing to the topography?

Mr. WRIGHT. Yes. I think a dam ought to be built wherever you can build a dam in this country to conserve our greatest resource water, and after you use the water for everything else you can think of, it does not hurt to run it through a generator.

Mr. CANNON. We will include in the record, at the proper places, the tabulations which Mr. Wright has supplied.

Mr. WRIGHT. I would like to conclude by thanking the committee, and answering any of your questions.

REDUCTION IN FUNDS FOR PURCHASE OF POWER AND WHEELING

Mr. CANNON. I note in programing your appropriations that you have programed less for purchase of energy and wheeling charges than the current year. You ask less for purchase of power and less for wheeling charges in 1957 than you received in 1956. Why this change in requirement?

Mr. WRIGHT. I expect it is because of our better water conditions and a revision in the estimate of the actual lease payments into line with what the actual investments in the systems are. You will recall last year the committee said when you provided the $6 million that you were not quite sure whether that was the proper figure, but as estimates become firm you would determine it. The firmer estimates now indicate that we need less for purchasing power than was included in the figure last year.

Mr. CANNON. There has been, however, no change in wheeling charges?

Mr. WRIGHT. On wheeling charges, no particular change in it that I know of; no, sir. It would be all purchase of power.

USE OF GENERATING AND TRANSMISSION PLANTS

Mr. CANNON. Do you expect to fully utilize the generating and transmission plants in the coming year, 1957?

Mr. WRIGHT. At the present time we are in a situation where to fully utilize them you would have to get about 85 percent total capacity out of them.

Mr. CANNON. That is operating at full capacity?

Mr. WRIGHT. Taking total kilowatt-hours they could produce at full capacity to get proper utilization of them, we would need to get about 85 percent of that. We are getting right now, I would judge, in the order of 65 or 70 percent and we are increasing it as rapidly as we can on our load curve. Remember that when Congress changes directions, it requires some readjustment of troops.

USE OF CONTINUING FUND

Mr. CANNON. Last year, Mr. Wright, you told us you would need a little over six million dollars more in your continuing fund. I notice that you are winding up here with a balance of a half million dollars. So it is apparent you did not need the full amount, at least you did not use the full amount. How do you account for that change in plans?

Mr. WRIGHT. I account for it by the very nature of this kind of estimating. For a Government Administrator of an operation of this kind to be sure he is going to get by he has to anticipate the worst situation in every line of his operation because it could happen. You could have the worst water year, have the maximum requirement, have the highest maintenance and operation, have the highest replacements; in order not to be operating definitely with knowledge of a deficiency you have to put your estimate at what the maximum requirement may be on you for that particular year in this operation.

Mr. CANNON. It is a matter of accuracy of estimate rather than a matter of developments which have changed basic considerations?

Mr. WRIGHT. That is correct.

DELIVERY OF POWER ON NORTHWESTERN CO-OP SYSTEM

Mr. CANNON. Are you delivering power to the REA load centers on the Northwestern Cooperative System?

Mr. WRIGHT. We are not, sir.

Mr. CANNON. You are not delivering it at all, or——

Mr. WRIGHT. We are not delivering at load centers. We are delivering it off the main grid at Missouri City.

Mr. CANNON. Why?

Mr. WRIGHT. We had never leased the Northwest 69 kilovolt system and the direction of the committee was to adjust the rates or the costs in such a way that as near as practicable the cost at load centers of the cooperatives would be the same. It was proposed by the Department and Southwestern Power Administration that that be achieved in the revised rate schedule through a discount from load center to main grid.

Mr. CANNON. Did the direction of the committee contribute to the best interests of the consumer?

Mr. WRIGHT. The committee indicated——

Mr. CANNON. Did those specific directions at that time contribute to the best interests of the consumer?

Mr. WRIGHT. The idea that this power should be delivered to all load centers at as near the same cost as possible, is in my mind to the advantage of the consumer and the well-being of the consumer.

Mr. CANNON. The direction of the committee, then, was amiss? We went a little far afield in that respect on that one direction?

Mr. WRIGHT. No; I do not think you went far afield. I think when you put the word "practical" in there you gave some flexibility in your direction and I think the Department and SPA has needed the time we are taking to do this to adjust our total financial picture to accomplish the objective of the committee.

Mr. CANNON. You think while they might not consider it practical at this time, it will be practical in the future?

Mr. WRIGHT. I think we will come as near to it as we practically can. What I conceive you have done is say that you want a postage stamp rate but you want a different rate for different classes of service. If it is airmail service, you want one postage charge and if it is second-class matter, another charge; so that anybody who is getting service at a load center shall have approximately the same rate. We understand your direction and the Department, in working out its new rates, has attempted to solve the problem. SPA and the Department has attempted to solve that problem and the only question about the rates is not whether we are solving that problem but whether the total rate level is too high by extra financial obligation.

Mr. CANNON. In the year 1957, if that is practical for the other generating and transmission plants, why would it not be practical for Northwest?

Mr. WRIGHT. The difference between Northwest and the other G. and T.'s may be seen from this map. The closest hydropower to the Missouri area is practically at the southern boundary of Missouri. We can feasibly market hydropower to customers other than the G. and T.'s who do not have thermal power in the Central area, the KAMO area and the Sho-Me area, but when you get to the Northwest area, you get beyond the feasible marketing distance of hydropower

from the southern Missouri boundary and your total load in the Northwest area for all practical purposes will be carried by the Missouri steam plant, with them feeding thermal power south and the hydro projects furnishing only standby in event of breakdown of a unit of the Missouri plant.

Mr. CANNON. I am not in a position to measure distance. It looks as if Central is as far away as Northwestern.

Mr. WRIGHT. The farthest point on Central is the closest point on Northwestern runs way up here to Iowa.

Mr. CANNON. It is not on the map?

Mr. WRIGHT. No, sir. It runs all the way from Missouri City on up north.

Mr. CANNON. How far into Iowa does it run?

Mr. WRIGHT. It does not run into Iowa; runs up nearly to Iowa.

Mr. CANNON. It does not cross the State line?

Mr. WRIGHT. No, sir. We made that point perfectly clear with Northwestern in the original negotiations when the Government took the position it could not justify leasing the 69-kilowatt system of Northwestern, but to carry out the direction of the committee it is proposed that whatever rate schedule be adopted have a different level at the load center than it does off of the main grid and that the difference be related to cost of delivery from the main grid to load centers. We have determined that our overall cost of such delivery is about 2 mills per kilowatt-hour, including the company contracts.

Mr. CANNON. You personally concurred in that decision?

Mr. WRIGHT. Yes, sir.

Mr. Chairman, I would like to say this off the record.

(Discussion off the record.)

Mr. CANNON. Would you say there is a practical difficulty in delivering to the Northwestern and REA load centers?

Mr. WRIGHT. From the hydro plants; yes, sir.

Mr. CANNON. A difficulty which does not apply to the other G. and T.'s?

Mr. WRIGHT. That is correct. It is strictly a difficulty of distance.

ADDITIONAL CUSTOMERS

Mr. CANNON. Last year you emphasized the fact that you would have trouble building your system up with the right kind of loads to sell enough power to give you an economic operation. But you seemed to have refused to consider serving additional customers such as the Northeastern Electric Cooperative and cities of Troy, Sedalia, and Tipton. That does not seem quite——

Mr. WRIGHT. That is not a correct statement, Mr. Chairman.

Mr. CANNON. I thought surely not. Give us your views on that.

NORTHEAST COOPERATIVE PROBLEM

Mr. WRIGHT. The Northeast Cooperative is a separate G. and T. Cooperative which built a generating plant of its own of 15,000 kilowatts consisting of two 7,500-kilowatt units, and a 69 line serving a number of cooperatives whose total load was 7,500 kilowatts, slightly less than 7,500, and the other unit was used to serve a Bureau of Mines project which has canceled its contract to take power from that cooperative and now buys from a utility company because of a cheaper

rate, I am told. The Northeast Cooperative does not want me to sell them power, they want me to buy the entire output of one of their units which, of course, is a standby unit and want me to undertake some form of integrated operation with them which would lower their costs.

We have attempted to try to help them find a market for this power, but I see no way I can integrate power into my system which has a cost of some 11 mills and integrate it in with this other power that I have and sell the power either for the present 5.6 rate or the 7.71 rate proposed in the new rate schedule.

There may be some answer to integration with them. The answer is not in my judgment anything like any contract we worked out with other people where the plant was designed to operate with the Government which this one was not designed to do. We have even gone so far as to try to work out a contract by which the city of Springfield, who have been delayed in their construction of their new plant, can go up and buy power from this Northeast Cooperative this summer, let him pump it into the Central system up here, which we have under lease, and we exchange that power back to Springfield and let these people make some money. We think we have an opportunity to do it.

Mr. CANNON. They would be pumping into the pool on one side and you would be taking it out on the other.

Mr. WRIGHT. The city of Springfield would be taking it out.

Mr. CANNON. They have lately increased their rates up there. What justification was there for an increase in rates?

Mr. WRIGHT. Northeast Cooperative probably had to increase their rates because they lost this Bureau of Mines load and they have one generating unit sitting idle.

Mr. CANNON. How did they happen to lose that Bureau of Mines contract?

Mr. WRIGHT. I imagine that contract, I do not know, but my assumption is that their contract with that load expired and the load found a cheaper place to buy power.

Mr. CANNON. Why is their power higher than power elsewhere in the State?

Mr. WRIGHT. About a half-dozen reasons. One is their units are very small. The second one is that the fuel——

Mr. CANNON. You mean there was a mistake in the original designing and engineering of the plant?

Mr. WRIGHT. Maybe not for the purpose which the plant was built for, but certainly for the purpose of integration with anybody there is a mistake. The fuel cost is higher than cost of total power in a number of the generating plants.

Mr. CANNON. It is the fault of the plant, then, rather than the management of the plant?

Mr. WRIGHT. I do not know the management, I do not know anything about the management. I know the board of directors and the manager have had some pretty good slug-fests. They tried to get me in the middle of 1 or 2, but I did not get in.

Mr. CANNON. My observation is when it is necessary to slug that you are pretty good yourself.

Mr. WRIGHT. I do not like to slug from the middle.

Mr. CANNON. You have sufficient power at this time and you told us, I think last year, that one of your difficulties was that you did not have markets for all the power that you could supply; is that still true?

Mr. WRIGHT. No, sir; I told the committee incorrectly last year. I had less faith in this area and less faith in the people than is developing to be the case. We are finding a restoration of this market much quicker than I had every hoped we could find it. In other words, I had thought people who had depended on the Government for service and had been let down would be rather leery about coming back, but they were back before I got home from this committee and there are a number of people who want power.

TROY AND SEDALIA

Now, the city of Troy, which you mentioned, is 40 or 50 miles from the nearest line. I do not know whether a line can be justified to them or not. That has to be studied. We would not have the capacity to serve Troy until the Table Rock Dam came in, in any event. The city of Sedalia and the cooperative at Sedalia is negotiating for a portion of their power supply from the Government now because there is a line they may be able to build to.

CITY OF TIPTON

The city of Tipton, I did not know wanted to buy power and the cooperative at Tipton has been served by Central's extension of a line to Tipton.

Mr. CANNON. There certainly is a remarkable difference in your testimony last year, Mr. Wright, and this year. Last year you told us that you did not have enough outlets for your power and this year you tell us that you have too many. Last year you had more power than there was demand and this year the demand is greater than the power.

FULTON

There are a number of small units up there. For example, I had a letter this morning from Fulton, Mo. Fulton, Mo., has a municipal plant but their load is increasing. They want additional power, want you to supplement them. They say that the hookup would require less than a mile of facility.

Have they applied to you?

Mr. WRIGHT. I do not believe they have recently, and I do not believe we have talked with them recently but I have no doubt that the letter to you is extremely accurate in their need, but I want you to understand my testimony last year. It is different and I am the first one to admit it is different.

I told you last year that Congress, having told Southwestern to drop certain forms of contract and do something else, had occasioned Southwestern to tell lots of people we were not going to be able to serve them.

Mr. CANNON. It was a result of a statement from Congress?

Mr. WRIGHT. It was a result of an action Congress took which I refused for 8 hours last year to say was a bad action, as the Chairman will remember.

Mr. CANNON. You finally agreed it was a bad action?

Mr. WRIGHT. No, sir; I have not yet. I will not say an action of Congress is bad. I may say it was not in accordance with my recommendation.

Mr. CANNON. It was not in accordance with your recommendation?

Mr. WRIGHT. That is right.

Mr. CANNON. It is still not in accordance with your recommendation?

Mr. WRIGHT. That is correct, but you have reactivated contracts which enables me to enter markets.

I told you last year I did not think we would be able to develop those markets as rapidly, I thought we had lost a lot of years in marketing, but before we got home we had those cutomers waiting. They had more faith in it than I. The faith was not entirely faith. In many of these towns that need power they have ignored this program for years and they suddenly find out they have no way to vote bonds to get more powerplants, and the only place to get it is to come to us. Some of them would not let our salesmen in town that now want the power. That is fine. We are glad to see them kiss the book.

Mr. CANNON. What could you do about Fulton?

Mr. WRIGHT. I do not think we can serve Fulton until we get Table Rock Dam. I think we are going to have all we can do to handle the load growth of the customers we have now and emergency cases. If Fulton was an emergency case that had to have 150 or 200 kilowatts to get by we would probably hook them up.

Mr. CANNON. You know Fulton has priority under the law. Are you supplying power to some nonpriority user that should be subject to a priority request?

ARKANSAS-ALUMIMUM CO. CONTRACT

Mr. WRIGHT. We are supplying it to one nonpriority customer under a long-term contract under the famous contract called the aluminum contract.

Mr. CANNON. What is the life of that contract?

Mr. WRIGHT. Thirty years, I believe.

Mr. CANNON. It still has some time to run?

Mr. WRIGHT. It still has at least 25 years to run.

Mr. CANNON. Is not 30 a rather unusual term for a contract of that character?

Mr. WRIGHT. Yes; it was and it was certainly an unusual term to have a contract without redetermination of rate provision without limitation.

Mr. CANNON. Why was that contract made?

Mr. WRIGHT. I do not know. You will have to ask the former Secretary of the Interior. That is the one contract SPA has that I did not sign.

Mr. CANNON. It was the Secretary of the Interior?

Mr. WRIGHT. His office negotiated it and signed it.

Mr. CANNON. What would have been a reasonable length for that contract if he insisted on its being made? What would be a reasonable term for that character of contract?

Mr. WRIGHT. Thirty years would have been all right, if you had a rate redetermination every 3 years or 5 years, and if Congress provided additional dams promptly to make up for the capacity of Bull Shoals which it was said on the floor of Congress was being utilized in this contract, on the theory that additional dams would be provided to replace power used for the contract.

NEED FOR ADDITIONAL DAMS

Mr. CANNON. Would Greer's Ferry be a dam that would serve the purpose in that respect?

Mr. WRIGHT. It would. Bull Shoals is located right at this green point on the map just north of Carter, Ark. Greer's Ferry is located about 40 miles from there, near Heber Springs on the middle fork of the Little Red River. Right here where the pointer is, is Greer's Ferry and here is Bull Shoals.

The obligation under the aluminum contract could be supplied from Greer's Ferry or any other dam we elect.

Mr. CANNON. You would advise construction of Greer's Ferry Dam?

Mr. WRIGHT. Mr. Chairman, I have testified that Table Rock, when it comes in, will do no more than handle load growth, that we are now limited to taking emergency additional power requirements on, in the Southwest. We will only handle load growth with Table Rock for about a year and a half and again the customers who are connected with the Government will have to find alternate sources of power, if you do not build additional dams in that area.

Mr. CANNON. What about Beaver Dam?

Mr. WRIGHT. Beaver Dam is also in the area adjacent to the grid. Beaver is located right here near Bentonville, Ark. You will notice that one of the beautiful things about the grid the Government has seen fit to build there, is that there are a lot of dams awful close to it.

Mr. CANNON. The construction, then, of Table Rock Dam, Beaver Dam, and Greer's Ferry would all contribute to supply current which is not only needed now but will be even more imperatively needed in the future?

Mr. WRIGHT. I think that is definitely true and I think it will supply current that the people who will use it are not now buying from any source other than the Government or producing their own.

Mr. CANNON. Bull Shoals is quite an extensive project and it promises to supply a large amount of power, but there are units there which can be added but which are not now contemplated would still further increase the capacity of that dam at a relatively lower cost. Why were those additional units not installed?

Mr. WRIGHT. I assume they thought at the time, like maybe I did last year, that there was no market for the power.

Mr. CANNON. What do you think about it now?

Mr. WRIGHT. I have told you that I can market the power from anything you can build in the Southwest during the interval while you are building it.

Mr. CANNON. Then we should build the Greer's Ferry Dam, we should build Beaver Dam, and we should put in every unit in Table Rock Dam that the engineering situation permits.

Mr. WRIGHT. Yes; and you should put every unit in the Bull Shoals Dam.

Mr. CANNON. Are there still units that could be put in the Bull Shoals Dam?

Mr. WRIGHT. Yes, sir. Bull Shoals was designed and constructed for eight units. They have only four in the dam. Now, when you complete Table Rock, which is under construction, the entire water conservation of Table Rock Dam will flow through the Bull Shoals Reservoir and be available for the Bull Shoals units.

Mr. CANNON. The two units that have been deferred at Table Rock should be immediately constructed?

Mr. WRIGHT. I do not know what units have been deferred at Table Rock.

Mr. CANNON. There have been two up there deferred at this time.

Mr. WRIGHT. I think all of the units ought to be put in Bull Shoals and Table Rock and at least 2 more should be put in Bull Shoals at this time and at least 3 units put in Table Rock initially.

Mr. CANNON. You could market all the power from them and from the Greer's Ferry and from the Beaver Dam, if available?

Mr. WRIGHT. You produce it and we will sell it, sir. The market is there for hydropower for peaking purposes in the Southwest. If I ever had any doubt on it, when a company as smart as Union Electric starts talking about 1,800,000 kilowatts for daily peaking, I have no fears of the future.

Mr. CANNON. And the construction of added dams and these additional units would benefit that section of the country and benefit the individual consumer?

Mr. WRIGHT. And all of the operating utilities as well; yes, sir.

Mr. CANNON. And it would not in any way detract from the business and profits of the private utilities?

Mr. WRIGHT. Not if it is continued to be marketed as it has in the past within the lines of cooperative endeavor.

Mr. CANNON. It would take no markets from private utilities?

Mr. WRIGHT. That is correct. The private utility capacity and this hydro capacity would be planned together to serve the total markets most efficiently.

REINSTATEMENT OF ORIGINAL G. AND T. CO-OP CONTRACT

Mr. CANNON. Last year we asked you to reinstate, reactivate, certain contracts. To what extent have you been able to comply?

Mr. WRIGHT. Immediately upon passage of the legislation, the contracts for lease operation of facilities were reactivated by letter of agreement with Farmers Western in Oklahoma, with KAMO Cooperative in Oklahoma and Missouri and with Northwest Cooperative in Missouri and Central Cooperative in Missouri and at the request of the Sho-Me Cooperative we entered into an interim contract providing that for a certain period of time no action would be taken on the activation of the contract, we would continue to deliver them power, which was at their request.

All of the contracts were, therefore, reactivated with 4 G. and T. cooperatives of the 5 and negotiations were immediately undertaken for the amending of the contracts in line with the suggestion of the Congress. When we came to the point in those negotiations of resolving the questions with the Comptroller General of the authority to do that, the question was submitted; when the Comptroller General's reply was given we undertook negotiations immediately, leading to the completion of the amendment and those negotiations are under way now.

We find that the cooperatives have ideas that perhaps were not in the picture before. The cooperatives would like to add in the contracts now, they tell me, a provision that if they find later on in the deal that they no longer want to lease the capacity to the Government

that they might have the right to withdraw it. There are quite a lot of items, Mr. Chairman, that are in negotiation and we have agreed upon a draft with the KAMO Cooperative which we hope will finalize in the next several weeks and act as a pattern for the rest of them. In my judgment it may be several months yet before the contracts are completely amended.

Mr. CANNON. In the form in which you suggest the contract would be satisfactory to you, the contract would be satisfactory to Southwestern, the Department of the Interior, and to the cooperatives and their customers?

Mr. WRIGHT. It would not be satisfactory to me or the Southwestern Power Administration, Mr. Chairman, but they would be in accord with the directives of Congress. Remember I told you I do not say Congress does anything wrong, but I would not recommend the provisions for inclusion in these contracts which Congress has asked we put in these amendments.

Mr. CANNON. What feature of it?

OPTION TO PURCHASE

Mr. WRIGHT. I do not think the option to purchase the system should have been canceled because I think it gave up in the contracts all the equity the Government acquired by these lease payments.

Mr. CANNON. Mr. Wright, that is the one point on which this contract has been bitterly criticized by members of this committee—that option to purchase?

Mr. WRIGHT. I agree it has been criticized, but that does not make me agree with it.

Mr. CANNON. You are not in sympathy with these members who criticized that section of the contract so vigorously last year?

Mr. WRIGHT. No, sir. I am not in sympathy with any deal where I am buying a house on time payments and the man selling me the house has a right 5 years from now to say "I have changed my mind, it has been rental payments you have been paying."

EFFECT ON CO-OPS OF CONTRACTS NOT REACTIVATED

Mr. CANNON. Let me ask you, Mr. Wright, what would have been the result if you had not reactivated those contracts? What would have been the effect upon the cooperatives and their customers?

Mr. WRIGHT. I think the cooperatives were in an impossible situation and were facing bankruptcy.

Mr. CANNON. And their customers were facing an increase in rates?

Mr. WRIGHT. Probably an increase which they could not bear.

Mr. CANNON. So you consider, then, the reactivation of the contracts as——

Mr. WRIGHT. A good piece of business for the cooperatives and consumers, but not a good piece of business for the Government.

Mr. CANNON. The Government has lost nothing by it?

OPTION TO PURCHASE

Mr. WRIGHT. I think the Government has lost an equity in the system worth perhaps 50 or 60 million dollars.

Mr. CANNON. It has lost the option to buy, but it has not lost anything by maintaining the old rates?

Mr. WRIGHT. No, sir; I do not think the Government is put to any additional expense. But 10 years from now the generating and transmission cooperative loads may have grown to a point where it would be highly advantageous then to cancel the lease arrangements with the Government and say "We do not want any more of those lease arrangements, we will not agree to any new rates, we want a brand new contract now and the Government can whistle for its facilities to serve the town of Fulton, Mo."

Mr. CANNON. I am still a little uncertain, Mr. Wright, about your statement that the Government has lost equity. These plants and these facilities belong to the co-ops. They borrowed the money to construct them and they are amortizing them every year. They are paying it back. I do not see where the Government will lose anything. The Government will get back every cent it put in.

Mr. WRIGHT. SPA, by these lease payments, will give the cooperatives the money to pay the Government back, whatever it is.

Mr. CANNON. Yes, and the co-ops are paying for everything they get. They are collecting from their customers and paying back at a regular rate of amortization the cost of every cent that the Government has loaned them.

Mr. WRIGHT. They pay it back in this way. They will pay from their power bill to the SPA and out of that power bill paid to the SPA and all other power bills paid to the SPA we will turn around and send the cooperatives a check in the amount of the lease payment which they could even endorse and give to the REA Administrator.

Mr. CANNON. You have not lost money by it.

Mr. WRIGHT. That is right.

Mr. CANNON. You got value received?

Mr. WRIGHT. I agree. As long as that arrangement continues, as long as we had the use of the capacity of those facilities, then we would be assured of an equity, but if the cooperatives elect, and they can, without this option to purchase, to terminate this arrangement with the Government and we may have paid this lease payment 10 or 15 years and then have nothing. I do not say the present people would do it, but let us say a bunch of stinkers gets in and say, "We do not want this arrangement."

Mr. CANNON. That is very remote. You do not really anticipate the cooperatives ever taking advantage of you like that?

Mr. WRIGHT. No, sir. I agree.

Mr. CANNON. I agree with you there is no likelihood or probability of it.

Mr. WRIGHT. I have heard of places where cooperative systems have been sold to private utilities and they might take advantage of me.

Mr. CANNON. As long as we treat the cooperatives fairly they are going to be able to fight the utilities off. Utilities are trying to take them over. Utilities want to establish a complete monopoly under which they will control the manufacture and distribution of electric power in the entire United States. And having a monopoly, they will make their own rates and, of course, we know that, judging by past experience, they will charge all the traffic will bear which means enormous profits.

However, as long as the cooperatives are permitted a fair contract such as they have now, there is no possibility of the Government losing anything or Southwestern losing anything.

ARKANSAS ELECTRIC CO-OP CONTRACT

You told us there were existing contracts between SPA and the Arkansas Electric at the time the public works bill became law last year. This contract was similar to the one between Central and Southwestern, or was it?

Mr. WRIGHT. Yes, sir; it was similar between Central and SPA and Northwestern and SPA, and KAMO and SPA.

Mr. CANNON. You decided that this contract was not to be honored when the others were reinstated. I was a bit puzzled as to why you should make that distinction.

Mr. WRIGHT. I did not decide that. The contract itself said that if the cooperatives had not completed their plant and their system by July 1 of 1955, I believe the date was, that the contract was terminated and had no further force and effect by its own terms.

Mr. CANNON. Why should the contract not be reinstated and all treated alike?

Mr. WRIGHT. I wish to explain to you, if I may, why. The Supreme Court of Arkansas had held for many years that this cooperative had no right to enter into this contract and had no right to carry it out and the cooperative was forbidden to carry it out, to use the loan for construction of the plant, or to build the lines. When the Legislature of Arkansas met—I believe it was last year—they passed a new law overriding the State supreme court decision, but this did not activate a contract which had already expired by its own terms.

If you proceeded with arrangements with the Arkansas Electric Co-op, you would have to negotiate a new contract. It could be a similar contract.

Mr. CANNON. Why should that not be done? It seems that would be the most reasonable thing in the world, treat everybody alike.

Mr. WRIGHT. I will tell you why, in my judgment, it should not be similar to the ones amended as Congress recommended. I would not recommend to the Department a contract under which the Government undertook a total financial obligation of the repayment of a system and total financial obligation of integration of a thermal generating plant without acquiring an equity and a guaranty that the Government's business rights in that would be protected.

Mr. CANNON. In other words, you think this clause, which was objected to by members of this committee last year and which is being removed, should be retained?

Mr. WRIGHT. In my judgment, if you are going to pay for a house in monthly payments you ought to have the right to buy that house as long as you keep your monthly payments up. That is the thing, I have been criticized for putting that option in, that I was trying to build a power empire. Certainly not for myself. I will not be here when it is here.

Mr. CANNON. Of all the ridiculous things I have ever heard—is the charge that the Government is going to try to build a power empire. Most ridiculous. As you have said, and I think everybody else would say—I do not believe there is a man in this Congress who

would approve of a Government monopoly of production and distribution of power. And I think that there is hardly a man in the Congress that would vote to give the public utilities more than the ratio you stated a while ago, 10–90, 50–50, depending on topography of the country in which it operated.

As you say, you know of no purpose or possibility of establishing an electric empire in which you would be the czar or in which any other man would occupy a position of arbitrary control.

Mr. WRIGHT. I do not think so as long as the Congress of the United States has the review of it, but I am not so completely confident that the purpose behind this could not be entirely different from the purpose I had, which was to protect the equity of the Government who made payments for a certain system based on the cost of that system. And the option to purchase was for that reason and that reason alone. A perpetual right to use the system or perpetual right of some other kind might give the Government an equity, but I do not feel it is in these contracts as we have been directed to amend them.

NEW RATE SCHEDULES

Mr. CANNON. You have not yet filed with the Federal Power Commission new rate schedules on which you were working?

Mr. WRIGHT. No, sir, we have submitted it to the Department of the Interior and they have approved it, but at the request of certain committees of Congress the Secretary, I believe, has delayed filing that, until the date of May 7.

Mr. CANNON. You have made a study to determine how long it would take for SPA to pay out the same cost of power as used in the rate schedule, if you used the present rate A schedule with discounts comparable to those used above?

Mr. WRIGHT. If you retain the present A schedule, the system would pay out, and our rate specialist estimated it would take about 78 years, but that is based upon the fact that the G. and T. systems would be paid out in 35 years and that we would get the continued use of them by payment of only maintenance and operation costs and with the contracts as amended, I am sure, if I was a cooperative, you would not get the continued use of them for payment of maintenance and operation cost. I would go in then and ask you for the rate on the main grid and move it out myself.

MR. CANNON. How about the A schedule with the discount proposed in the new schedule?

Mr. WRIGHT. The A schedule of discounts proposed in the new schedule I doubt would pay out in the amortization period. It might pay out in a very long amortization period, if you apply this discount on the A schedule; but I doubt it.

Mr. CANNON. To give us a clear understanding of that, your rate proposal consists of a discount rate, with a certain discount under this basic rate for power delivered under certain conditions?

Mr. WRIGHT. Let me see if I can clarify that for you. If you will take the rate I have handed the committee, with all of the four rates on the first page on this sheet with the red line on it, that is the type of basic rate proposed by the Southwestern Power Administration to the Department of the Interior. You will notice at 50 percent load factor, you will see that the base rate is 7.71 at the load centers with

a 2-mill discount, or 5.71 if brought back to the common main grid, and half a mill further discount, if transmission is supplied by the customer. If you took that rate and lowered that 7.71 down to the 5.6 level now applicable in the A rate, you might pay out if you tilted that rate up and charged the companies what they are being charged under the contracts now. In other words, the A rate would not apply in the area above 200 hours. You might pay out in the 100-year amortization period, because that would reduce your total obligation by about $1,200,000 a year and on the amount of power involved in this, that would be just about the difference between 7.71 and 6 mills. I think the A rate if changed to 6 mills might pay out with the discount in 100 years.

Mr. CANNON. The A rate changed to 6 mills would include the discount?

Mr. WRIGHT. No, sir; that would be the top level A rate.

Mr. CANNON. And the discount would be taken off that?

Mr. WRIGHT. Off that. It would probably pay out in 100 years, provided you utilized your interchange to adjust with the companies in the area above 200 hours, or less than 200 hours delivery. That, of course, is what we try to do.

Mr. CANNON. How do you justify changing the rate based on this discount feature?

Mr. WRIGHT. If my groceryman tells me I have to pay my bill in 50 years, and my bill is so much, then that is the price I have to charge for my tomatoes to pay him. There is no quarrel, so far as I know, about the level of this rate, other than the amount of the financial obligation that has to be repaid, and the Comptroller General has told Congress every year that Congress ought to do something about that. I did not tell you, but he did.

Mr. CANNON. The discount to a certain extent dims our outlook. Are there other formulas you could use without the discount?

Mr. WRIGHT. I know of no other formula that would let us serve the load centers of the Northwest at the same price as we serve the load centers of Central, unless you let the Northwest buy at a different price on the main grid than Central buys it at the load center.

Mr. CANNON. I notice in your new rate schedule you provide that the new rate should not apply to certain contracts with private utilities. You did not name the utilities. What are the utilities to which you would not want to apply it?

Mr. WRIGHT. That would be the Southwestern Gas & Electric contract, and the Oklahoma contract, and the Texas Power & Light contract.

Mr. CANNON. In what respect do they differ from the others?

Mr. WRIGHT. They all purchase their power in a fashion which would entitle them to the maximum discount and for 200 hours of power; they are now paying 7 mills a kilowatt-hour and the company rate, and under the revised rate, it would enable them to buy that power for 6.55 mills, or a lesser rate. And I think rates can be negotiated with the companies, which they will be willing to pay on the main grid for about the same price called for in this new rate at the load centers.

Mr. CANNON. Do you include the Brazos?

Mr. WRIGHT. I did not include the Whitney contract. That should have been included. That is the contract with the Brazos River Transmission Cooperative, which is an REA.

Mr. CANNON. I may have misunderstood you, but it seems to me you indicated these private utilities which you have enumerated got a lower rate.

Mr. WRIGHT. No, sir; they pay a higher rate.

Mr. CANNON. And you say that does not include the Brazos Electric Power Cooperative in Texas?

Mr. WRIGHT. Their rate would not be affected by this new rate, because they are buying the entire output of Whitney Dam at about 11 mills per kilowatt-hour.

Mr. CANNON. Those particular utilities are now higher and have been higher all along; but, under the new schedule, they would be less than they are now; is that true?

Mr. WRIGHT. That is true, but we state that the new schedule will not apply to them. We have asked the Commission to exclude those contracts.

Mr. CANNON. That means they will pay more; that the new schedule will not apply, and they will continue to pay more?

Mr. WRIGHT. That is correct.

Mr. CANNON. How did you arrive at a list which excluded these and which did not exclude others? Who made the decision on that; who decided which should be included and which should not be included?

Mr. WRIGHT. The Southwestern Power Administration, wherever a contract might have been to our financial disadvantage to adjust the rate on contracts with private companies, we elected not to do it. We hope to negotiate new rates with them that will be considerably higher than those based on the rate in those exchange contracts; but, in submitting this rate, we did not feel it should be held up for negotiating new rates with the company when they were already paying a higher rate than this new rate calls for. I hope for as adjustment of the rates with the companies. I am getting tired of the criticism of these contracts. I want the committee to understand that the rate schedule A is not in the company contracts. In the company contracts, each one is a special rate approved by the Federal Power Commission for that particular contract, and they would not be under this rate A. We have to submit separate complete rates for each contract, and would do so if we desired to change the company's contract.

Mr. CANNON. But you do use a schedule which applies to all and to which you have made various exemptions. The schedule adopted will apply generally?

Mr. WRIGHT. It will apply generally where the customer takes primarily his power supply from the Government. We may have peaking contracts in which the rates worked out in the contracts will be higher than this general schedule. In no case do I believe they will be lower.

Mr. CANNON. How about the Arkansas concern which supplies the Reynolds Aluminum people?

Mr. WRIGHT. In that one, all bets are off, because the contract was made for a long time with only a limited rate adjustment possible under the contract.

Mr. CANNON. Who made it?

Mr. WRIGHT. It was signed by Mr. Oscar Chapman, Secretary of the Interior, and negotiated in his office, I believe, by the then Under Secretary of the Interior Searles.

Mr. CANNON. What is the term of that contract?

Mr. WRIGHT. Thirty years.

Mr. TABER. When was it made?

Mr. WRIGHT. That was made and signed, I believe, in 1952—January 29, 1952, was the date of the contract.

Mr. CANNON. It was a war contract. We were at war and aluminum for planes was in short supply. These discount features are what complicates the situation here. I see it and still it is to a certain extent a confusing factor. How does this discount feature in the proposed new rate work out?

Mr. WRIGHT. I did not get that.

Mr. CANNON. How does this discount feature in the new rate work out; how does it operate?

Mr. WRIGHT. It would operate this way. You take the Sho-Me Power Corp., which would be a very good example, if Sho-Me elects to retain their 69-kilowatt system and operate themselves——

Mr. CANNON. Does it apply only to Sho-Me?

Mr. WRIGHT. This rate would operate the same to anybody. If Sho-Me took service from the Government and the Government leased the 69 kilowatt system and Sho-Me took service at the load center, there would be no discount; but if Sho-Me operated their own 69 kilowatt system and took service at the main grid at Maries and Mansfield, if it took service at those two points on the main grid at 69,000 volts, it would get a 2-mill discount. If it took service at 164,000 volts it would get an additional discount of 5 percent, because they furnish their own transmission to farmers.

Mr. CANNON. Why was not that provision included in schedule A?

Mr. WRIGHT. Because it did not make any distinction between airmail and first class mail, and when the committee directed us to deliver to everybody at the load centers at approximately the same rate, they are asking us to give everybody who takes airmail the same rate, and anybody not taking airmail is therefore entitled to a different rate; because some people may own lines that get it from our grid to their load centers, and other people may not own them. To get them all the same, if the fellow owns his own line, you have to give a discount because he is bearing part of the expense of getting it.

Mr. CANNON. The G. and T. people own their own lines?

Mr. WRIGHT. Yes; but they lease to us. We have to pay for that.

Mr. CANNON. Does this new schedule work a hardship on the G. and T. cooperatives?

Mr. WRIGHT. No, sir.

Mr. CANNON. They are now allowed the rates which are given others here.

Mr. Wright. Yes; they are.

Mr. CANNON. There is no sacrifice on the part of the G. and T. rates in this new schedule.

Mr. WRIGHT. No, sir. Let me show you why I say that. The Central Cooperative would have the election with us, of taking delivery at their load center at 7.71, or taking delivery at Chamois, and earning the 5.71 rate, whichever they wanted to do.

Mr. CANNON. We have had an investigation by a very competent team which is still in the field, and their investigation shows that the result of this schedule will increase the G. and T. cooperatives from the present A rate.

Mr. WRIGHT. Yes.

Mr. CANNON. For example, the Brazos people, the Deep East Texas, Fannin, Farmers, Grayson-Collin, Hunt-Collin, Kaufman, and Sam Houston, Tex., Cooperative, all have an increase of 1.2; but the G. and T. cooperatives, including Central and Southwestern Farmers, KAMO, Electric Power Cooperative and Northwest have an increase of 2.19. So you are increasing G. and T. more than you are increasing the customers under the Texas Power & Light contract.

Mr. WRIGHT. Let us have a look at the two contracts. Northwestern would not have all of the increase; N. W. would have the full discount.

Mr. CANNON. I do not want to include Northwestern; I merely include the KAMO, the Western, Farmers, and the Central Electric. Each one of those will be increased 2.19.

Mr. WRIGHT. That is correct.

Mr. CANNON. And these others under the Texas Power & Light contract will only be increased 1.2.

Mr. WRIGHT. That is correct. The reason for it is this: To get power from the main grid at the Farmers, and to get power from the main grid at Central, and to get power from the main grid at KAMO will cost in excess of 3 mills. In the case of getting power through the Texas contract, it does not cost a cent. So the discount provides if we have no wheeling charge with a private utility company, they earn a discount.

Mr. CANNON. The net result, the net effect is that when this schedule goes into operation, the G. and T. people are penalized?

Mr. WRIGHT. The G. and T. people will pay the maximum rate, because we are tying all of the cost of moving it from the main grid out to their load centers. They would earn no discount.

Mr. CANNON. The net result is that they pay more under the new schedule than they have paid under the old schedule?

Mr. WRIGHT. That is correct.

Mr. CANNON. And they are going to pay more proportionately.

I notice the customers under the Oklahoma Company's contract are charged 2.20 at Fort Sill, Okla., while the customers under the Sooner Cooperative contract only pay 0.00833. It is so small, that you have got to go into five figures to show how small it is.

Mr. WRIGHT. I do not know where you get your figures; but, in my judgment, under this contract, the cooperatives served through the Oklahoma contract in southeastern Oklahoma, of which there are six, will pay 7.71 mills per kilowatt-hour. They will not earn a discount.

Mr. CANNON. This report shows that they will pay less—0.00833. On the other hand, under the contract of the G. and T. cooperative system, including Arkansas, Kansas, Oklahoma, and Missouri, the rate will be 2.187. There is a wide discrepancy.

Mr. WRIGHT. I agree with you that the gentlemen you have had study these rates are very competent, and they got all of their information from us, so far as I know.

Mr. CANNON. It is bound to be reliable if they got it from you.

Mr. WRIGHT. I am going to state further I think they misunderstood something, because we intend to bill Oklahoma Cooperative 7.71 for that power, at this new rate. If they elected to combine together, and buy their power off of the main grid, and move it at their own expense, then they would earn a discount of 2.5 mills and would pay less; but they would have the cost of moving it from the main grid out to the load centers. And Central does not have any such cost as that.

Mr. CANNON. We will ask these men to see you.

Mr. WRIGHT. I will be very happy to see them.

Mr. CANNON. Then you can go into the matter fully on both sides. But the report we have here is that G. and T. was materially penalized.

Mr. WRIGHT. I am sure they are not, because they would have the election of buying either way they wish to buy. If they wish to pay the expense of moving it out from the grid themselves, they would have the right to buy it at the grid, and earn the discount. As a matter of fact, that is what the Department wanted them to do.

TUESDAY, MAY 1, 1956.

SPA POWER SUPPLY AND DEMAND

Mr. CANNON. Mr. Wright, continuing our inquiry of yesterday morning, I was surprised at your statement that whereas you had surplus power for distribution the last time you appeared before us just a few months ago, you now have more demand than you can supply. In your last statement you had more power than you could market, and now you have more demands than you can fill. What new customers have you taken on since you were before the committee last?

Mr. WRIGHT. Mr. Chairman, we are taking on the new customers of, I think, the city of Paris, Ark. and we are negotiating with the Cooperative of Sedalia, Mo.

Mr. CANNON. You are negotiating, but have you taken them on yet?

Mr. WRIGHT. We have not taken them on, but that is the utilization of the power we have available, which I did not anticipate last time. I assume that was your question?

Mr. CANNON. You have taken on the Paris contract?

Mr. WRIGHT. The Paris contract has actually been signed.

Mr. CANNON. It has not yet gone into effect?

Mr. WRIGHT. I am not sure as to whether service has started, but it will be prior to the summer months.

El Dorado Springs, Mo., is being negotiated with.

Mr. CANNON. That contract has not yet been consummated?

Mr. WRIGHT. That is correct. The city of Springfield, Mo., due to the fact that the Westinghouse strike delayed the construction of their plant, is probably going to have almost twice as much power from us during the coming summer, as anticipated when I appeared before the committee last year.

Mr. CANNON. But they will get that from Northeastern?

Mr. WRIGHT. Only a small part of it.

Mr. CANNON. Why not all of their demands, because Northeastern has more power than they can market.

Mr. WRIGHT. I will explain to you why, Mr. Chairman. We are serving the city of Springfield 15,000 kilowatts.

Mr. CANNON. At the present time?

Mr. WRIGHT. That is right. They anticipate they will need 35,000 kilowatts during the coming summer. They expect to get 7,500 kilowatts of that additional from Northeastern. The balance of it will have to come from us to get Springfield through the coming summer, which will be about 13,000 or 14,000 kilowatts more. Every single one of the G. and T. loads are growing faster than we anticipated that they would grow when I appeared before you last year, as is the load growth of every other customer. Furthermore, some of the customers that we serve had purchased a part of their power requirements from the companies during the period when we didn't have it. They now want to buy it all from the Government, and most of them have come in and amended their contracts to take it from us, and the companies have released them back to us. The companies prefer that they take it from us, so that there be no such thing as split billing on the system.

Now, that has accounted for the tremendously quick restoration of SPA's market which I told the committee I feared would not happen.

Mr. CANNON. But the only new customer that you have really taken on is Paris, Ark. All the rest were customers at the time you were before us last time?

Mr. WRIGHT. That is correct—with the exception of the city of Springfield in that the demand is considerably larger. Lamar, Mo., for example, almost doubled what they had from us.

Herman almost doubled what they had from us last year and I had no way of knowing that this is going to happen. I told you that when I came in here I did not know that Fulton, Mo., wanted power. I believe you were the first one to tell me that.

Mr. CANNON. Is Herman securing all the power that they require?

Mr. WRIGHT. Herman is securing all the power that they require now, except that the city would like to have an assurance of having enough power to be able to serve the entire city because the service by the utility company in the city is being rendered without a franchise, as it has for many years. The city desires to eliminate that system in the city, which they tell me they will be able to do if they have enough power to supply the whole city, and they can assure the Utility Commissioner of Missouri that we can do that.

Mr. CANNON. You are familiar with the history of Herman; are you?

Mr. WRIGHT. Yes, and we are prepared to increase power to Herman just as soon as the mayor tells me how much he wants.

SERVICE TO NORTHWESTERN CO-OP

Mr. CANNON. You are now operating the Northwestern steam plant at Missouri City?

Mr. WRIGHT. No, we neither lease nor operate it. We buy the output of the steam plant. They operate it and deliver power to us upon the schedules submitted to them by the Government.

Mr. CANNON. Now, you have an option on it?

Mr. WRIGHT. No, sir; we never did have an option on the steam plant.

Mr. CANNON. Could you have it if you wanted it?

Mr. WRIGHT. No, sir. I don't believe they would give it to us.

Mr. CANNON. But you control it absolutely by purchasing the entire output?

Mr. WRIGHT. We control the amount of the output; that is correct.

Mr. CANNON. You get everything they deliver?

Mr. WRIGHT. That is correct.

Mr. CANNON. Now, you are delivering power to that plant 200 miles away. Is that about 200 miles away from you?

Mr. WRIGHT. Yes, it is about 200 miles. The only time we deliver power to Missouri City from the hydro project is when one of the units at Missouri City is down for repair. The rest of the time the capacity at Missouri City exceeds the power requirements north of that point and actually power flows south from Missouri City into the Kamo system, except when the unit is down for repairs.

Mr. CANNON. You have no technical difficulties in delivering power there when it is necessary?

Mr. WRIGHT. No, sir; outside of the excessive loss.

Mr. CANNON. Well, you told us yesterday that you couldn't supply those outlying consumers up close to the Iowa line because this was too great for your plant, but they would not be supplied from your plant, they would be supplied from the Missouri City plant. Why would it not be practical to supply them from the Missouri City plant?

Mr. WRIGHT. The Missouri City plant has an installed capacity of 40,000 kilowatts. The present load of the N. W. cooperative is approximately 25,000 kilowatts. The N. W. estimated load within about 5 years will be the entire capacity of their plant, and they would have to move the power from the hydro dams up there. There would be no capacity in the N. W. plants to supply those loads and in my judgment that is too far to move the power economically and feasibly. We have held that position, sir, ever since we undertook negotiations with the N. W. Cooperative.

OPPOSITION TO G. AND T. CONTRACTS

Mr. CANNON. Have you noticed any evidence of any attempt or desire on the part of the companies to take over the public systems?

Mr. WRIGHT. You mean take them over in the Southwest? No, sir. I don't think I noticed any attempt to take them over. I noticed Union Electric has acquired some of the smaller companies in central Missouri, but I have seen nothing that I consider an attempt by the utilities to take over any public systems there.

Mr. CANNON. How did you interpret the suits that were brought by the private utility systems of Missouri to interfere with the operation of the G. and T. cooperatives?

Mr. WRIGHT. They never made any secret of the fact they did not like the contracts the generating cooperatives had entered into. They made every effort to prevent those contracts from going into effect. Contrary to that, the companies of Oklahoma had no objection to the contracts which the Government had with generating cooperatives of Oklahoma, and our contract with the Oklahoma companies was negotiated with the idea of utilizing that system in our contract with the Oklahoma companies.

Mr. CANNON. Not satisfied with the decision in the lower courts, they carried it on to the upper courts to secure a decision which would eventually have destroyed the G. and T.'s?

Mr. WRIGHT. The decision would have prevented any integration contemplated between the Government and the cooperatives and in my judgment, when you destroy that integration, it would have been fatal financially to those cooperatives, unless the companies would have been willing to make an integration with them.

Mr. CANNON. We gave them more than a year to make a reasonable rate, and they refused to make a reasonable rate, a rate under which the G. and T.'s could survive.

Mr. WRIGHT. Mr. Chairman, I have always been of the opinion that if the company contract had been entered into, our problems with the generating cooperatives would have been much simplified. I regret we did not establish through the 12 company contract the same relationship we have in the State of Oklahoma and the State of Texas, where we do not have the problems you have in Missouri.

Mr. CANNON. But it is very evident the 12 utilities used every effort within their power to destroy REA and other public utilities. Now, what is the attitude of the private utilities toward the annulment of the contract which the Government had with the private G. and T. companies?

Mr. WRIGHT. I don't know their attitude at this time. I assume that they are accepting the fact that the contracts are reactivated and that the Government will, in line with the directions of Congress, carry out the directions of Congress.

Mr. CANNON. Yes; but it is a necessary agreement. It is not a voluntary agreement.

Mr. WRIGHT. I think that is true, but, as I testified before the Senate, they would need a shotgun.

Mr. CANNON. You also testified that unless Congress had come to the aid, at least, of the cooperatives and had reactivated the original contracts which the Government had entered into with them, that it would have caused their bankruptcy?

Mr. WRIGHT. That is correct.

Mr. CANNON. In the event of their bankruptcy, when they were put up for sale under the sheriff's hammer, who would have bought them in?

Mr. WRIGHT. I don't think they would have been put up under the sheriff's hammer, but I think REA would have taken control of the properties and I assume REA would have been able to, since it is a Government agency, to merge under the Interior Department, under another Government agency, and do a pretty good job of bringing the thing out of trouble.

Mr. CANNON. The Interior Department has never shown a favorable attitude. The Interior Department has opposed the reactivation and has established a policy, since you wrote me, of refusing to enter into a similar contract with anybody else, although there are others which would come in under the same category.

Mr. WRIGHT. The Department of Interior has been quite frank about its decision on the contracts. My statement related to what happened if it went under the sheriff's hammer. I assume that REA would have made arrangements for the operation of the system in such a way they could have been successfully operated with other

Government operations in that area, and would not have been sold out to the utility companies. I don't think that would have happened.

Mr. CANNON. In case it had happened, under the sponsorship of the Department of the Interior, who would have bought it?

Mr. WRIGHT. Oh, I think there are lots of people who would have bought them.

Mr. CANNON. You know very well they would have been bought by the private utilities?

Mr. WRIGHT. I think the utilities in the immediate area would have bought them.

Mr. CANNON. In other words, the private utilities were trying to destroy REA. Every evidence points toward that. They have taken every movement which was open to them adverse to the continuation of REA and TVA.

Mr. WRIGHT. They stated in negotiation with the Government they were willing to sign at one time a 12-company contract which would have completed the integration of the Government and their systems in the Southwest and would have provided the relationship which would have permitted the integration with G. and T. cooperatives. In my judgment, as soon as the people saw it work as they have seen it work in Texas and Oklahoma, it would have stopped the fight, and the companies were sincere in negotiating that 12-company contract, and they were ready to sign it and I recommend it to the Secretary of the Interior and he didn't approve it. I think it was the greatest mistake in power ever made in the Southwest, and I have said that a half a dozen times.

Mr. CANNON. How do you account for the Secretary of the Interior failing to approve it?

Mr. WRIGHT. He just didn't happen to agree with it. He just thought it was not the thing to do, and I think he was perfectly sincere in his beliefs. I think he made a mistake .

Mr. JENSEN. Mr. Chairman, who was the Secretary of the Interior?

Mr. WRIGHT. Mr. Chapman.

PROPOSED NEW RATE SCHEDULE

Mr. CANNON. It should also be noted that we were at war and this was a war contract. Under your proposed rate schedule, which you discussed with us yesterday, those who use the peaking power will enjoy a slight reduction, I believe; isn't that what you told us?

Mr. WRIGHT. No; those who use the peaking power will pay exactly the same rate as anybody else using power. It depends on where they buy it, whether on the main grid or out at the load center. The different rates and discounts are acquired by where they get it. I might clarify that a little bit for the committtee, if I showed you exactly what is involved in that.

Take, for example, the Central Cooperative. To move the power from the main grid here at Jefferson City out through the 69-kilovolt systems, with the present cooperative load on Central of 14,000 kilowatts, costs the Government 5 mills a kilowatt-hour. If we get the system loaded to 20,000 kilowatts it will cost the Government 3.3 mills a kilowatt-hour, and if we load the system to 30,000 kilowatts, which it will be in 10 years, then we will move the power out for about 2.5 mills. That is the discount the Department recommends,

so this cooperative then, in that case, could operate its own system and buy power on its main grid if it so elected, and come out exactly the same if the Government was leasing the system. Now, in case of Kamo Cooperative, with a present load of 27,500 kilowatts, it costs 4.44 mills to move it up here. If they double their present load, which they will do in about 10 years, it will cost them 2.24 mills to move it out.

Now the cooperatives know this, and that is why they want to put a provision in this amendment that they have the election, and we have none. My objection to it stems from that difference and the gamble we have assumed, that if they get enough load on their systems so that the discount is a better financial deal than our paying the lease payments, they can elect to take it. They all want that provision, because they know they are going to be there in about 10 years.

The cost, for example, right now, on western farmers, is 3.8 mills a kilowatt-hour. Now, if they double their load on that system, which they will do in less than 10 years, then their costs will be 1.9 and it would be better for them to take a 2½-mill discount and incur a cost of 1.9 mills.

PEAKING POWER DISTRIBUTION

Mr. CANNON. Who uses the bulk of that peaking power?

Mr. WRIGHT. Who uses the bulk of the peaking power? The bulk of our peaking power, I filed a report yesterday, which shows exactly who uses it and I have estimates here and I believe I can fairly well estimate the percentage on that. Maybe I can do it without even looking at this book: 150,000 kilowatts out of 640,000 goes to the aluminum plant. Twenty-six thousand kilowatts of the capacity, and none of the energy, goes to the Oklahoma companies; 10,000 kilowatts of the capacity and none of the energy, goes to the Texas companies; 12,000 kilowatts of the capacity, none of the energy, goes to the Southwestern Gas & Electric Co. All of the rest of the capacity goes to preferred customers.

Mr. CANNON. Now that is a total of how much?

Mr. WRIGHT. We have a total of 642,000 and we are using 150,000 of that for the aluminum plant, and using 26,000 of it in the Oklahoma contracts, and we are using 10,000 in the Texas contract and we are using 12,000 in the Narrows Dam contract with the Southwestern Gas & Electric Co., and all of the rest of it goes to preferred customers.

Mr. CANNON. How much is the rest of it?

Mr. WRIGHT. Whatever that is left from 640,000. I haven't added it up.

Mr. JENSEN. 444,000.

Mr. CANNON. Now, your capacity there is 642,000?

Mr. WRIGHT. I make that 544,000 kilowatts.

Mr. CANNON. 642,000 is your capacity. How much are your actual sales to priority customers?

Mr. WRIGHT. My actual sales right now are probably 40,000 or 50,000 less than that to preferred customers. I would say that my sales right now are 400,000 to preferred customers and 198,000 kilowatts to nonpreferred customers.

Mr. JENSEN. 198,000.

Mr. WRIGHT. Yes, 198,000 to nonpreferred customers and about 40,000 of it is uncommitted at the present time, in load growth, which will be committed during the coming year in load growth.

Mr. CANNON. This allocation of aluminum load—is that preferred or nonpreferred?

Mr. WRIGHT. The aluminum load is nonpreferred. That makes up 150 of the 198. What we are swapping in the Oklahoma contract is 26,000 kilowatts of capacity for the firming up of energy to make the total power available for the preference customers.

Mr. CANNON. Are you talking now about firming power or about the total output?

Mr. WRIGHT. I am talking about taking the peaking power we have and the peaking capacity we have—which is all we have—and trading that with somebody for the continuous energy that we need to serve a preference customer, delivered out where we need it, to serve the preference customer, which is what we do in the Oklahoma contract.

In other words, we are serving all the golden dots on this map in Oklahoma through the Oklahoma company contract, and for every kilowatt of capacity the Oklahoma companies deliver to us we deliver them 1.65 kilowatts of capacity back, but they deliver to us for every kilowatt, 365 kilowatt-hours, and we only deliver them 330 kilowatt-hours. That is the exchange. We trade less ripe tomatoes for their greater number of green tomatoes and we take the green tomatoes when we need them and they take the ripe tomatoes 8 hours a day, 5 days a week. Two days a week we don't run our generators.

Mr. CANNON. The customers using the peaking power enjoy a more favorable rate?

Mr. WRIGHT. No, sir; they pay more for the power than do the preferred customers, but they will pay exactly the same for the power if they both used the same kind of power.

Mr. CANNON. There is no distinction there?

Mr. WRIGHT. No, sir; we have the rate nearly exactly the same for everybody, as close as we can get, and have from the start of our operation.

In actual numbers, the A rate is $1.35 for 200 hours and the rate we have put in company contracts is a demand charge of $1.15 and an energy charge of a mill and a quarter, which is $1.40 for 200. So the rate of the companies is actually a nickel higher or putting it in mills per kilowatt-hour, the A rate is 6.75 mills and the rate to the company is 7 mills; within a quarter of a mill of being the same.

Mr. CANNON. Now the mill increase per kilowatt-hour—where is the distinction there?

Mr. WRIGHT. Well, there wouldn't be any. There isn't any mill increase that I know of, Mr. Chairman. I don't understand your question.

Mr. CANNON. The different rates.

Mr. WRIGHT. Well, if you put a mill increase per kilowatt-hour on each one of them it would be the same. One of them would go to 7.75 and the other would go to 8.

PROPOSED NEW RATE SCHEDULE

Mr. CANNON. Now, the report that we have here is that the increase shown for the G. and T. systems, is a figure of 2.187, whereas on the Sooner Cooperative contract there is a figure of 0.00833. To what would you say that is due?

Mr. WRIGHT. I should say the committee should understand what those figures are. It is perfectly true the proposed rate will result in an increase of about 2.18 for the G. and T.'s, and the customers served at load centers from the A rate.

Now, this so-called Sooner Cooperative contract, is a contract that does not exist yet and these five cooperatives in southeast Oklahoma have never elected to build an electrical system and to own it themselves. They have elected to be serviced through a company contract.

Now they say that we do not propose that the cost of these systems constructed by other cooperatives should be reflected in our rates, and that we may elect—as they can—to buy it back on the main grid themselves, and make their own arrangements for moving it out to load centers. They have been negotiating with the power companies to that end, and I believe their negotiations have progressed to the point where they have persuaded your investigators, who talked to both them and the power companies, that the power companies are going to charge them only a minor fee for moving it out there, so that they will buy on the grid and get it moved out there for about 2 mills less than the G. and T.'s will get the service through the leased system.

Mr. CANNON. And all other peaking sales would be what?

Mr. WRIGHT. That would be continuous purchase, in both cases. Actually, what the Sooner Cooperative would do, they would buy the Government hydroelectric power on the grid and would buy the steam power from the companies themselves, and pay the companies to move it out to them and that would cancel our Oklahoma contract with respect to those cooperatives because, if they stay under the Oklahoma contract with the Government, they are going to get a 2.187-mill increase, also.

Mr. CANNON. And the mill increase per kilowatt-hour through the G. and T. system would be 2.187 and the G. and T. cooperatives' peaking sales would be minus 0.00833?

Mr. WRIGHT. No; the peaking sales would be just the same as if they bought it in the same place. If the G. and T. wants to buy it in the main system, he has no increased cost.

For example, N. W. will buy power under the new proposed rate at 5.32 mills per kilowatt-hour, which is slightly less than the present A rate; this is delivered on the main grid.

Mr. CANNON. They are being penalized then because they are wheeling power over these lines?

Mr. WRIGHT. No, sir; I think they are being given exactly the same election as anybody else. I think this rate with a discount is perfectly fair in that it lets anybody elect to take delivery at the load center or back on the main grid, whichever he wishes, and in the contract amendments we are talking about with the G. and T.'s, they are asking for the right to change their mind any time they want.

Mr. CANNON. Do you consider the Missouri City plant as an asset to your system?

Mr. WRIGHT. Do I consider the Missouri what?

Mr. CANNON. An asset to your system, the Missouri City plant.

Mr. WRIGHT. I consider the contract for integration and operation with the N. W. Cooperative and the Missouri City plant will be a good, economical, feasible operation, when we attain the load growth we expect to attain, under it. That isn't yet true. I think it will be

an asset to our system as soon as we have that. I thought so at the time I recommended the contract—and I haven't changed my mind about it.

RELATIONSHIPS IN SPA AREA

Mr. KIRWAN. Mr. Wright, you said yesterday you came up here 13 years ago, and you first came up as head of the Southwestern Power. I was on this committee then. I have been on it for 14 years.

There is a vast difference between the first day you came up here and now. You seemed to have a trainload of people coming in here with you.

Mr. WRIGHT. Yes; and some of them were "for" and some of them were "against."

Mr. KIRWAN. What I am leading up to is, that there were many coming up when the utilities came in. As you say, there were 12 different companies in the group. Those days have gone by, when you come here in groups, both for or against the Southwestern Power.

The question I want to ask is: How is your relationship down there today?

Mr. WRIGHT. Very good. I regret, as I believe do most of the utility companies, that we didn't achieve success in the 12-company contract, but we have a definite, complete operating understanding between us and the private companies. They have realized that the operations of Southwestern Power are not going to injure them; that we try to place ourself in their positions in our dealings with them, and I believe they respect and have confidence in our plans and our program, and I think that there is not too much fear of what may happen in the reactivation of these contracts and the effects upon the companies.

As I have always told this committee, through the years, from the first day I brought this report—and this is the one the committee saw—we have never deviated from that report. We have used the facilities of existing utilities wherever we could, and we have given the Congress back and the Treasury back many thousands and millions of dollars of money that you gave us that we could have spent for lines. We didn't spend it. Our relationships are good.

Mr. KIRWAN. Now, getting back to the committee again, you are the senior member probably of any agency, older than anybody connected with Bonneville or Central Valley or Southeastern, Southwestern, or any of the agencies. How did you find your relationships with this committee down through the years?

Mr. WRIGHT. I found my relationships with this committee excellent through the years. You know I came up here the first time a lug of a freshman and I said, "Give me all or nothing" and I apologized to the committee the next year for being such a fool, but through the years, while you haven't always agreed with us, and while you haven't always given us the desired program we asked for, I believe that the committee has been fair and as far as I am concerned, the relationship is excellent.

Mr. KIRWAN. So due to friendship and education down through the Southwest there, you have seen that the pelple are much better off all over that area. Both came to a friendly understanding, the

public power people and the private utilities, and in that part of Texas and Oklahoma, whatever it may be, of the 12 power companies, they are much better off than the first day you appeared in front of us.

Mr. WRIGHT. I have seen that and they are.

I wonder if you gentlemen know that the actual accounting for power in this integrated system that I have colored on this map is done by the operating staff of the utilities and the Government, without one single written word of contract?

Mr. JENSEN. Written word of what?

Mr. WRIGHT. There is not a written word of contract in accounting for the flows of power between systems. The operators get together and agree upon it. There is no way to write a contract. The man does not exist that is smart enough to write a contract to do it.

In other words, when you had your hurricane in Connecticut we picked up the load in Kansas City. How are you going to write a contract to cover that?

Mr. KIRWAN. I am for public power wherever they can use it. I want to come to an understanding that no water which can produce power goes to waste. I am for developing it, but I do not know what is going on in Nebraska. It is a public power State, and I don't know whether I am justified—not I, but the committee or Congress—to pay $5 million of the United States Government's money to run a transmission line all the way over into Nebraska. They are a public power State. I think they ought to be able to take care of their own lines down there.

Could you enlighten me any on that point?

Mr. WRIGHT. As I told you yesterday, I thought it was a mistake to go all public power in Nebraska. I think it would have been better in Nebraska if the companies that were sound and operating soundly would have made arrangements with the State of Nebraska districts for the proper utilization of their mutual systems in integrated operation. You may be surprised to know that many of the officials of public power districts are the same officials that were in the private companies. When they bought out the companies, I saw very little difference in management except you have a possibility—I don't know whether it actually exists in Nebraska, I haven't been there for many years—but you have a possibility of a public monoply in Nebraska far exceeding anything that could occur privately, in my judgment.

Mr. KIRWAN. I am speaking just as someone from Ohio, who has no public power in his district, and I am for public power, but I am thinking: Is it not going a little too far? The people in Ohio are going to pay $5 million to put a transmission line, or part of that $5 million, into the State of Nebraska. That is what I would like to be enlightened on.

Mr. WRIGHT. You are inquiring into whether or not Ohio should use public credit through the Federal Government to finance a line to Nebraska, which Nebraska would pay for in some years, through the power rates, or whether Nebraska and the States should use their own credit?

Mr. KIRWAN. I would like to see somebody in Nebraska take hold of this transmission line.

Mr. WRIGHT. I am not a Congressman, so I don't have to assume the responsibility of making that decision, but I think there is a great deal of merit in your position.

Mr. KIRWAN. I am for public power whenever you can generate it. I am for it and it has done a wonderful thing for America, such as in 1921, when both conventions were broadcast for the first time by radio. It was quite a novelty. They told of the electrical age that was approaching or coming upon us, but after they got caught up in selling the washing machines and everything else to those that had power, in their homes, it wasn't long until we went into chaos and collapse. Only 1 out of every 29 in the country had power out in the farm areas. After they started up public power and everything, they certainly made a change and I am for that change that came over America, but I do not see why we in Ohio have a part in paying that $5 million for a transmission line from the Fort Randall Dam up on the Missouri Basin into the State of Nebraska.

Those are my thoughts. I do not know how far right or wrong I am, but those are my thoughts. That is all, Mr. Chairman.

ADMINISTRATOR'S POSITION ON PUBLIC AND PRIVATE POWER

Mr. EVINS. Mr. Chairman, I have 1 or 2 observations. I have listened to the testimony of Mr. Wright, and it was interesting, in contrast to the testimony which this committee has had before from the Southeastern Power Administration, and Southwestern Power Administration and the TVA, the Bonneville Administration, and others. Even Bureau of Reclamation Officials have indicated that there is a shortage of power throughout the Nation, that there is a shortage of power all over the country. All of these agencies have indicated a national need for power, but it seems to me that your position would be to make power even more short, to restrict power production, to limit it. I am unable to reconcile your position, in view of the testimony of all of the officials of all of these agencies, concerning the shortage of power.

Mr. WRIGHT. I don't know, Mr. Congressman, what part of my testimony indicated to you that I thought there was not a need for this power. I believe I testified yesterday, in response to questions by the chairman, that I thought a dam ought to be built in America everywhere a dam could be built, as fast as the country could afford to finance it; and, so far as the Southwest is concerned, we needed every kilowatt-hour of hydroelectric power that could be developed as soon as it could be developed.

Mr. EVINS. In other words, you are supporting the other agencies, now that there is a need for power?

Mr. WRIGHT. I am supporting the other agencies that there is a need for complete development of all the hydroelectric power there is, and we can use it as quickly as you can get it, and we can market it during the period from the time you start the dam until the time you finish.

Mr. EVINS. I am very pleased to hear that testimony. I think it is very constructive testimony.

You are not, then, favoring an economic situation recommended by the private power trusts of the Nation to limit the power of the Nation?

Mr. WRIGHT. I certainly am not—if that is what they testified to.

Mr. EVINS. How do you stand, Mr. Wright, with respect to this committee's action for appropriations for continuing funds for the Southwestern Power Administration. Are you for it or against it?

Mr. WRIGHT. I am for it. The Department has submitted a budget including all of the required funds and the continuing funds for the coming year.

Mr. EVINS. You have indicated just briefly that within a period of 10 years the system out in the Southwest area would be overloaded. What is your agency doing, if anything, with respect to relieving that overloaded condition?

Mr. WRIGHT. We plan to bring to Congress, as fast as it is required, the necessary transmission additions to strengthen segments of the grid, which the Government, in our judgment, should build, to relieve that overloaded situation. We have already made contracts with everybody we can get to contract with us, which allow us to use the facilities that they will build and require them to build facilities as we require them, for additional loads.

EQUALIZATION OF RATES TO CONSUMERS AND COOPERATIVES

Mr. EVINS. This committee had testimony earlier that in various sections in this area the rates to the consumers and to the cooperatives were not equal, but different, and yet an effort has been made to equalize the rates and they are having great difficulty in securing that equalization, even considering the fact that this committee has recommended such action, and also the Comptroller General of the United States has ruled that authority exists for the Department to take action in that regard.

Could you tell us at this time why you have not taken action to equalize the rates to the consumer and the co-ops in that area?

Mr. WRIGHT. Yes. Unfortunately, this equalization of rates at the load center is also involved in the submission of an increase in the total rate level in the Southwest area, necessitated by an increase in the amount of costs allocated to power at the various dams in the area, and an adoption of an amortization period of 50 years.

The original SPA rates were based upon the allocations to power on a so-called incremental basis and 100-year payment.

Mr. EVINS. In other words, you can find arguments to negative any situation; is that not correct?

Mr. WRIGHT. That is not correct.

Mr. EVINS. Well, you have been rather successful in continuing to hold your job with the agency under both administrations; have you not?

Mr. WRIGHT. I have 23 years civil-service time. I am supposed to be a civil-service employee. I have permanent civil-service status. I assume that means something in the Government service.

Mr. EVINS. Well, it should.

Mr. WRIGHT. I have clearly stated to this committee, my differences of opinion with the Department of Interior every time I had one, with the Secretary sitting right at my side.

Mr. EVINS. With the other Secretary, you recommended increased appropriations for these programs and now with the present Secretary you are recommending a reduction or a decision cutting down on appropriations.

Mr. WRIGHT. I have never changed a single recommendation in appropriations at all, sir.

Mr. EVINS. Well, you just testified, using your own words, that you were "foolish" in the position you had previously taken.

Mr. WRIGHT. Because, in the initial request for funds in the Southwestern Power Administration area, I had asked for funds to construct a $23 million initial step of a program that might cost as much as $250 million, if we had to build it all, and I told a Democratic chairman of a subcommittee that if he didn't want to take the responsibility for taking the full initial step, he ought not to take any, and he promptly threw his book down on the table and said, if that was the attitude I was going to take he was through with me; I was wrong to take that attitude, and I was wrong to tell the committee that. I was wrong. And, by the way, I told them I was wrong long before the administration changed.

Mr. EVINS. You have changed your position since serving in the Department?

Mr. WRIGHT. No, sir. I realized I made a mistake in asking that so big a step be taken in the first year of this program.

Mr. EVINS. One other thing: You refer to moneys appropriated for power in Nebraska, and you will have to admit that power, wherever it is sold, whether it is Government power or private power, is monopolistic in its nature, and that where we can have competition, either through the Government or otherwise, it is helpful in the bringing down of rates for the consumer and the public generally; is it not?

Mr. WRIGHT. That is correct—and in the State of Oklahoma a customer has the opportunity to buy power from either the Government or the private companies. In Nebraska he has an opportunity to buy it from one place and that is the Nebraska public power districts system.

Mr. EVINS. Well, now, would you favor monopolistic private power?

Mr. WRIGHT. No, sir; I favor a considerable bit of both. And I have spent my life getting that.

Mr. EVINS. Where the Government enters the power field, there is a tendency to develop competition and to bring rates down, and reduce costs to the consumer; is there not?

Mr. WRIGHT. You bet your life—and I have been working all my life on that.

Mr. EVINS. I understand now that you prefer that position, rather than the existence of private power trusts?

Mr. WRIGHT. Yes, sir.

SERVICE ADJUSTMENTS DURING LOW-WATER PERIODS

Mr. DAVIS. I want to ask a few questions. In this case, it is for the purpose of eliciting information.

First of all, last year, I think it was, you said that the major cause of your difficulties was that there had been an unusual drought condition that had occurred over 2 years in succession.

Mr. WRIGHT. It was about a 3-year period, which was the occasion for our major financial difficulties last year; that is correct.

Mr. DAVIS. Now, has that condition alleviated itself? Have you had what you call normal water available?

Mr. WRIGHT. No, sir. It is alleviated somewhat, but we are still 10 percent under normal as of right now. We have, however, made contractual adjustments which will permit us to meet a period, a similar dry period, without curtailment of deliveries to any preference customer, as I testified previously.

Mr. DAVIS. During this time of unusual drought, how much power have you been giving to the Aluminum Co.

Mr. WRIGHT. The curtailment of deliveries to the Aluminum Co., from 200 kilowatt-hours per month down to 150 kilowatt hours per month. I think that curtailment occurred approximately over a period of 6 to 12 months. I am not positive. I could furnish that information for the record.

Mr. DAVIS. If you are satisfied that your recollection is reasonable, I think that is good enough for our purposes.

Now, during that corresponding period, what kind of curtailment of deliveries was required for the preference customers in the area?

Mr. WRIGHT. There was none.

Mr. DAVIS. There was none at all? And despite this, then, you were able to meet all the demands that were placed upon you by your preference customers in the area?

Mr. WRIGHT. That is right, however, another curtailment occurred, besides the aluminum contract. In the case of the Oklahoma companies, they agreed to continue delivering to the Government for service of preference customers out of their system all of the power those customers required under their contracts with the Government, and to defer taking any additional power from the Government until the Government's water conditions had been restored sufficiently to allow the Government to deliver without danger. We maintain the capacity of the systems that way and they curtailed their delivery and we returned the deferred energy to them now to where we only owe them about 3 million kilowatt-hours.

Mr. DAVIS. You were actually materially assisted in meeting your obligations to your preference customers by that arrangement during that time?

Mr. WRIGHT. If the arrangement had not been available to us, we would have failed completely in our obligations to our preference customers.

Mr. DAVIS. Now what, if any, expansion of, or extension of your activities in making new markets or any other new capacity has come to you since the time that you testified here a year ago?

Mr. WRIGHT. We have had the generating and transmission contracts reactivated, which made available, on a long-term basis the entire thermal capacities of the three generating stations, totaling 85,000 kilowatts. These, integrated with the Government system, present an entirely different power supply picture than it does without them, possibly to the extent of allowing us to utilize mutual reserves and pick up an extra 50,000 kilowatts over what we would have, operating independently. That addition has occurred to our power, plus a restoration to within 10 percent of normal water supply, plus the fact we now have entered into permanent arrangements with the companies, allowing us to defer, in event of critical water conditions, so that we can expand the power market out to take care of the load growth of all the customers who now have until the estimated time that Table Rock Dam comes in, and possibly pick up 20,000 to 25,000

kilowatts of new load, which we are limiting to emergency situations, as I have discussed with the chairman in the past.

Mr. DAVIS. You haven't made any arrangements then for distributing to G. and T. cooperatives that were, what you might call, outside the traditional area that you had been serving prior to the drought condition, have you?

Mr. WRIGHT. No, sir.

INTEGRATION WITH PRIVATE UTILITIES

Mr. DAVIS. Last year, I believe you can tell me if this is the equivalent of what you told us, the ideal condition for this entire area would be the integration of the G. and T. co-ops and the distribution co-ops in your Southwestern Power transmission system, and the private power producers in the area; is that a fair statement?

Mr. WRIGHT. That is correct.

Mr. DAVIS. Going back to the 12-company agreement which would have created that integration had it been in effect, is that correct?

Mr. WRIGHT. That is correct.

Mr. DAVIS. How many, if any, of those 12 companies are now integrated with your system in the Southwestern Power area?

Mr. WRIGHT. Only one, the Southwestern Gas & Electric Co. through its contract with us on the Narrows Dam has a limited integration with us.

Mr. DAVIS. So that the remaining 11 are still outside the otherwise integrated system in the area?

Mr. WRIGHT. That is correct.

Now, I think the record ought to show, Mr. Davis, that where the Secretary of Interior refused to approve that contract for a year, the companies would not enter into the contract after the change of administration occurred. They wanted a different form of contract at that time, and they were no longer interested in the 12-company contract, taking the position that they had given the Government a chance to do it and that they were no longer interested.

Mr. DAVIS. I think you explained that last year when you were here.

Mr. WRIGHT. Yes.

Mr. DAVIS. Your feeling then, a year ago, was, if I recall it, that the time had passed as of a year ago, it was no longer feasible to expect that you might get this overall integration?

Mr. WRIGHT. I don't think you will ever get it as a group or unit, because I don't think the companies south of the Missouri line will ever integrate with the companies north of the Missouri line. There is too much fuel differential, and I don't think they will ever overcome that obstacle, which is increasing all the time.

CURRENT CONDITION OF G. AND T. CO-OPS

Mr. DAVIS. We had 1 or 2 fairly small G. and T. cooperatives that were in real trouble a year ago?

Mr. WRIGHT. Yes.

Mr. DAVIS. What happened to them?

Mr. WRIGHT. Well, with the reactivation of the lease operating contracts, the only G. and T. cooperatives in the area that have any mate-

rial problem at this time are the M. & A. Cooperative at Poplar Bluff, in Missouri, which is rapidly overcoming the difficulty through arrangements either with us or Union Electric, whichever happens to be the best, and the Show-Me Power Cooperative, in central Missouri, who have not yet decided which way they want to go and they have some real problems to overcome. Those are the only two.

Mr. DAVIS. What do you mean they haven't decided which way they want to go?

Mr. WRIGHT. They haven't decided whether they want to reactivate the lease operating contract or want to enter into some alternative contract, involving an integration with some of the utility companies in the area. They have asked us to wait and give them time to decide.

Mr. DAVIS. And that is 1 of the 2, then, that have difficulties to overcome?

Mr. WRIGHT. Yes; that have difficulties to overcome.

The N. W. Cooperative has the difficulty that we never did lease their 69 systems. The committee directed that last year we do whatever we could practically to deliver power at the same rate and load centers to overcome their difficulty and we have been trying to find some way to do that, as soon as we can get a rate that does it.

COST ALLOCATIONS AND RATES

Mr. DAVIS. Now what, if any, authority do you have, in your capacity as Administrator, to fix the cost allocation of any of your projects in the vicinity?

Mr. WRIGHT. I have no authority.

Mr. DAVIS. What, if any, authority do you have to fix the rates for the hydroelectric power that is generated?

Mr. WRIGHT. We have only the authority to take the basic cost obligations that appear to be imposed on the Southwestern Power Administration by virtue of the cost allocations that are made and the estimates that the various agencies have of their costs involved, and create a total annual financial obligation against the Administration, and recommend to the Secretary of the Interior the rate structure that should be used to meet those financial obligations.

Mr. DAVIS. Then it becomes the responsibility of the Secretary of the Interior, to present the matter to the Federal Power Commission?

Mr. WRIGHT. That is correct.

Mr. DAVIS. On the basis of those statements that you just made—I am having some difficulty in understanding the conversation between you and the chairman yesterday in which there was a very strong criticism directed to the failure to have at least 100- or 50-year amortization period. Is there anything at all that you can do about that?

Mr. WRIGHT. At one time I had the authority to submit the rates directly to the Federal Power Commission and the Department agreed in the recommendation of the Southwestern Power Administration. That was Southwestern's authority at the time rates were paid out on the basis of a 100-year amortization period and on the basis of the incremental cost manner of allocation which was recommended by the Southwestern Power Administration.

The original A rate was established as an interim rate on the basis of the best studies and estimates we could make along the line of incremental costs and 100 year amortization.

The Federal Power Commission took exception to that every time, and even in the approvals of the Oklahoma contract rates, they took exception to our 100-year amortization.

Mr. DAVIS. That is in accordance with the nationwide policy of the Federal Power Commission?

Mr. WRIGHT. I believe it is.

Mr. DAVIS. So if you had fixed the rate on the basis of other than a 50-year amortization, it would have been an exception?

Mr. WRIGHT. At that time I don't believe it was an established nationwide policy. Everybody was trying to present their ideas of what it should be, and there was considerable divergence in the Department, even between its own agencies, and I believe I testified I don't know that anybody ever agreed with me it ought to be 100 years and it ought to be completely on the incremental basis. I still think so, and I have testified to that before congressional committees.

Mr. DAVIS. You are aware, of course, that in our authorizations and in our appropriations for the hydroelectric installations, that the economic benefit ratio is made up on the basis of 50 years?

Mr. WRIGHT. Yes; I am aware that the benefits are usually presented on a 50-year basis, although I believe for the first time this year some projects went through the Congress and were approved by the President, on 100 years, in the Wachita Basin. At least the President took some exception to that in approving it.

Mr. DAVIS. That, however, was not a power project?

Mr. WRIGHT. It was not a power project. I believe it was irrigation or flood control work.

Mr. DAVIS. Which is considerably different than these hydroelectric projects we are speaking of in the Southwestern Power area.

Mr. WRIGHT. Mr. Congressman, it is not different in my mind in the estimated life of the project. In other words, the usable life of the project to me as an engineer is the governing factor of how long you might expect to take to pay for it.

Mr. DAVIS. We are speaking about hydroelectric projects?

Mr. WRIGHT. Yes.

Mr. DAVIS. Now, is this true: that we, Congress—I shall refrain from using the word "we" for fear of misinterpretation that might be put on it—but would you say that Congress has a right to expect payouts from the sale of hyeroelectric power to be recovered into the Treasury, and that whatever is used here in this continuing fund would subtract from what otherwise would go into the Treasury?

Mr. WRIGHT. It would subtract from what would otherwise go into the Treasury. I assume that Congress has the right to expect anything it wants.

Mr. DAVIS. Well, let me ask it this way: Does the law provide that under projects which are constructed by the Government, which include hydroelectric installations, that this income is to be recovered in the Treasury?

Mr. WRIGHT. The original Flood Control Act does so provide, and I believe the continuing fund constituted legislation which amended that law.

Mr. DAVIS. Yesterday you spoke of a committee directive to deliver this power to a load center at a uniform rate.

Mr. WRIGHT. Insofar as practicable.

Mr. DAVIS. When was that?

Mr. WRIGHT. That was in the committee language of the reports on the appropriation bill last year, directing the amendments of the contracts.

Mr. DAVIS. Yes; I believe that that is all I have, Mr. Chairman.

APPROPRIATIONS

Mr. JENSEN. Mr. Wright, you have $1 million for administration, for the operation of the Southwestern Power Administration.

Mr. WRIGHT. Maintenance and operation, yes.

Mr. JENSEN. That is $250,000 less than last year.

Mr. WRIGHT. It is less than last year, but the $250,000 wasn't for Southwestern Power last year, it was to pay maintenance costs of the G. and T. systems until the contracts were reactivated.

Mr. JENSEN. That is $250,000 less.

Mr. WRIGHT. That is correct.

Mr. JENSEN. Let me say that I am sure the members of the entire committee have always felt that Mr. Wright runs his organization in an excellent manner, as far as possible, and watches his pennies pretty closely, and I think possibly you are one of the best power agencies in the country.

INCREASE FOR CONTINUING FUNDS

Now then, you are asking for more continuing funds than you got last year?

Mr. WRIGHT. Yes, sir; more than the committee approved last year. And when the Congress determined to provide the $6 million I believe it was more on the basis of the testimony from others than the Southwestern Power. The difference, Mr. Congressman, occurred from the fact that all of these systems were not completed and in operation during the current year when we utilized the $6 million. Actually, we are not spending $6 million. We are spending something considerably less than that.

Mr. JENSEN. You mean in this fiscal 1956?

Mr. WRIGHT. In this fiscal year, and we have placed in the record our estimate of what that would be.

Mr. JENSEN. You mean you have an unexpended balance?

Mr. WRIGHT. Yes, sir; which we proposed never be used or made available to us. All of these systems are now completed and the total expense of the lease and operations are imposed on us.

Now, if the contracts are amended and the "balance of" provisions are written in the contract, we will require, instead of $6 million, about $4,103,000, but I can't ask that the appropriation be adjusted that way until the contracts are amended, because the obligation exists on the Government today for the full amount of money requested.

Mr. JENSEN. Do you anticipate each year, as we go along, that you will make a smaller request for additional funds?

Mr. WRIGHT. Yes, by the additional sales of power, that will be true.

Mr. JENSEN. That is what I thought.

Mr. WRIGHT. That is correct.

Mr. JENSEN. All right. Now, going further, I remember several instances which you spoke of when you came before the committee before.

Mr. WRIGHT. Yes.

Mr. JENSEN. And you were then the Administrator of the Department, and we recognized your responsibilities, but when you made the statement to the effect that you wanted all or nothing, I remember there was an answer to the effect, "Well, you are liable to get nothing if you are going to take that attitude."

APPROPRIATIONS TO DATE

Well, then, we began to get together and we appropriated many millions and many thousands of dollars, in fact, for this Southwestern Power program. How many dollars have we appropriated to date?

Mr. WRIGHT. You have appropriated $27 million for construction, and of that we have used $24 million.

Mr. JENSEN. No. I mean altogether.

Mr. WRIGHT. I am going to tell you:

For construction you have appropriated $27,377,913. We have used $24,900,170, and we have returned to the Treasury unused—because we did not require it—$2,477,743.

For maintenance appropriations through 1955, you had appropriated a total of $9,531,000 and we had used a total of $7,667,000.

I have placed those figures in the record, Mr. Chairman.

For the dams in the Southwest, a total estimated cost of $357 million, of which, under the present method of allocation of power, $200 million is allocated to power, and $157 million balance to flood control and other purposes.

Mr. JENSEN. That gives us a pretty good picture of the dollars that we put in this project. I might say that I think you will no doubt say that in the last 14 years, the committee have agreed on every dollar that was appropriated for this great southwestern project. Nothing was added on the floor of the House and, generally speaking, I think your request for funds was pretty well followed. Possibly, in one or two items for transmission lines, the amounts were reduced, but, generally speaking, Mr. Wright, you got about what you asked for, because you generally asked for about what the committee felt was right.

Mr. WRIGHT. With the exception of 2 years, Mr. Congressman—I believe on one occasion there was an increase of $7,500,000 on the floor of the House, and another time the request for funds was reduced between the House and the Senate. The House had given us more than we needed after we made the Oklahoma contracts, by about $6 million, and I think at our request the Senate realined the fund in regards to the State of Oklahoma.

Mr. JENSEN. But, percentagewise, you have gotten 95 percent of all the money you asked for except the first time when this thing happened?

Mr. WRIGHT. I believe I was asked in the early stages of this project what I estimated the Government would have to spend for transmission lines in the southwestern power area in the total program in the next 40 years, and I believe I said in my judgment between $25 million and $50 million and we have now spent $24 million and we will have, in addition, the new dams that are coming in to tie to the grid,

and as we need to strengthen the grid, I will not be hesitant, nor will I ever be hesitant, in recommending to the Department of Interior any transmission lines that we think are needed or justified in the Southwest. I frankly have never been a guy that cares greatly about "owning" this particular job. I would like that to go in this record. If I am not good enough to hold it, then they can fire me and I think the Secretary will bear me out. I told him that the first time I saw him.

Mr. JENSEN. Now, is there any money in here for transmission?

Mr. WRIGHT. No, sir; there is not, this year, because we have no additional power coming in. We have enough lines to handle all the power we have now and when Table Rock Dam—before Table Rock Dam gets to the point of completion, I propose to recommend to the Department of Interior the lines that will be needed to put the Table Rock power from where it is to preference customers in the Southwest and I will support the efforts to get that line with everything I have.

Mr. JENSEN. And we expect you to do that.

HISTORY OF G. AND T. CO-OPS

Now, isn't it a fact that the G. and T. co-ops made application for REA loans which would run into what—around some $85 million?

Mr. WRIGHT. I believe the total loan was something in the order of $60 million to $70 million.

Mr. JENSEN. I thought it was higher.

Mr. WRIGHT. It may be higher than that.

Mr. JENSEN. Well, anyway, then we discovered that—or you discovered that cooperatives had overcapitalized to an extent and at a time before they could get this power, so that it would be necessary to ask for help from the Federal Government in order to meet their payout requirements, their payments, we will say. That is when you asked for continuing funds, is that right?

Mr. WRIGHT. No, Mr. Congressman; that isn't right. The Farmers Western Cooperative in western Oklahoma made application for, and secured a loan from the REA before World War II, and undertook some construction in the area in the way of lines.

Then KAMO Cooperative, in Missouri and Oklahoma likewise secured a loan before World War II and actually built a considerable amount of lines in northern Oklahoma and some line in southern Missouri over to the city of Cassville. That was done even before World War II, and before I got into Oklahoma in connection with the Grand River Dam.

When I went to Oklahoma—and I was the only one that went, so I have to say "I," I went to Oklahoma and undertook operations with the Grand River Dam, and I negotiated with Farmers Western in an attempt to find some way of working with them and the company to work that problem out, and that work continued in an attempt to get integration. It was finally achieved in the Oklahoma contract and in my contract with Farmers Western, which contracts were worked together, not as a justification for the allotment, but as the proper way to get integration into this area.

Now, in the case of the KAMO Cooperative, they bought a block of power from the Grand River Dam Authority during the war, and

the Grand River Authority ultimately leased their entire system in northeast Oklahoma.

They entered into this contract with the Government in this area [indicating] primarily to secure the same type of integration that we had worked out in western Oklahoma.

Now, the other cooperatives, Central, Northwest, and Show-me, fell in different categories, to this extent.

Show-me had already received the loans to buy out a number of small utility systems in 19 counties in central Missouri to serve everybody, towns, co-ops, and everybody else. They had done that. Their system consisted mainly of 33,000 kilovolt lines, which were all overloaded, and had to be backboned with a high-voltage transmission system, and Show-me entered into this arrangement for two purposes: One, to secure this high-voltage transmission line backbone, and the other to secure a source of power, not to justify their allotment. Central and Northwest, in my judgment, would not have been able to show feasibility in their studies had they and the Government not developed the so-called lease-operating contracts.

Now, that answers your question in its entirety.

Mr. JENSEN. No; it does not quite answer it because REA is in difficulty today.

Mr. WRIGHT. No, these contracts were made before the allotments were made. They were in financial difficulty—I think the financial difficulty occurred, Mr. Congressman, because the contracts were inoperative and they did not negotiate any alternate form of operation, but operated on interim relationships with the Government over a period of a couple of years.

Mr. JENSEN. What I am trying to find out, or bring out, was the fact that the G. and T.'s have been in financial difficulties.

Mr. WRIGHT. They have been in financial difficulties during the period the contracts were inoperative.

Mr. JENSEN. Now, in their appropriations we did not object to the part of the wording in the continuing contract or in the paragraph which authorized the continuing fund. What we objected to was the purchase of all the REA lines by the Southwestern Power Administration after the REA's paid off their indebtedness. The wording of that paragraph was that the Southwestern Power Administration could give REA $10 and they would own all the lines. That is the part we objected to, because we didn't think it was fair to the REA.

President Roosevelt at the outset of World War II, asked all of those 12 private companies to integrate their lines in order that full use be made of all the power of those 12 private utilities for defense purposes, and they did that. They had never before been integrated to that point. Now, as I understood, the feeling of the 12 private utilities was that power might be sold by the Southwestern Power dministration at such a low rate that it wasn't possible for them to compete with the Federal tax amounting to almost 2 mills. That is what they have been fighting for their whole lives and they represent billions—they are just hired men for those power companies, just as I am a hired man for my district and just as you are for Southwestern Power Administration.

Now, we, the committee, as you know, were very anxious to get these contracts signed up by the Southwestern Power Administration, the REA and private utilities, a contract similar to the Texas contract,

which I believe you say is working very well, would you not, Mr. Wright?

Mr. WRIGHT. Yes, I will.

Mr. JENSEN. At the time that contract was signed, one Mr. Clyde Ellis, the representative for REA, criticized that contract very severely. Speaker Rayburn was very instrumental in getting that contract signed, and Speaker Rayburn answered in telling Mr. Clyde Ellis, right from the floor of the House, that he was completely wrong, that he thought it was a good contract, not only for REA's, but people generally, the consumers, as well as the private utilities, and it has proven to be thus.

That is the thing we have been trying to get done, and that you have been trying to get, Mr. Wright, down in the other parts of your Southwestern area—get a contract similar to the Texas contract.

Now, on your Oklahoma contract, just what is that about? Is that similar to the Texas contract?

Mr. WRIGHT. Yes, it is. It is working very well.

Mr. JENSEN. It is working very well. All right. I have had not one word of complaint from Texas nor from Oklahoma since those contracts were signed. Now, why all this hullabaloo about private utilities wanting to take over REA's? It is, to me, unfounded.

I will never forget the day that Speaker Rayburn came before the committee, our Interior committee, Mr. Kirwan will bear me out on this statement, when we had this controversy up before us. I think it was 13 years ago, or maybe it was 12, when the Texas contract was under consideration, and he came before the committee and he said, "Well, gentlemen, there are those who think the Federal Government should own and control power producing and transmission facilities; there are those that think the private utilities should own and control all electric power producing and transmission facilities. I am not a member of either school," he said, "because I know that in order to get sufficient power production and transmission facilities to take care of the people in most of the areas of these United States, we will need private utility money, we will need municipal utility money, we will need REA money, we will need Bureau of Reclamation money, Southwestern Power money, Bonneville Power money, and so," he said, "let us work together as a team."

Possibly those are not the exact words that he used, but they are awfully close.

"And," he said, "let us work together and see to it that this power transmission program is not left undone because we need all of this power."

Well, now, on that basis, most of the Members of Congress have been working, and the Bureau of Reclamation has been working to that end. They believe in a partnership program, and certainly there has been nothing wrong with that.

In the State of Iowa we have integrated our private utility power with REA power and with the municipal power, to the benefit of everyone. You don't hear much about the power problems in the State of Iowa, nor do you hear much about any other part of the country, because they are willing to take and give and compromise differences of the different power-producing agencies. So we are getting power in most areas sufficient to take care of the power needs that exist.

Why should we make such a hullabaloo and fuss about this in the Southwest power program when Mr. Wright has explained it in detail, and unless the Congress throws a monkey wrench in the machinery—which I do not believe they will—the day is soon coming when that problem will also be solved, to the benefit of all.

I am not going to take any more of the committee's time. I just want to say again that I certainly know, as well as everyone on the committee, that the REA are in a financial squeeze in the Southwest power area, and that it is necessary that we help them over the hump, which I am willing to do. But in the meantime, I hope that the contracts can be handled like the Texas contract and the Oklahoma contract, and then this problem will fade away like the morning dew.

Mr. CANNON. Mr. Wright, you are in complete agreement with everything that Mr. Jensen has said?

Mr. WRIGHT. Not on all of it. I wasn't asked any questions about it.

Mr. CANNON. With what do you disagree?

Mr. WRIGHT. I would amend his statement only in a few particulars. I think, in fairness to Mr. Ellis, and I do not always agree with him, that at the time Mr. Ellis was condemning the contracts he was condemning the utility contracts and Mr. Jensen remembers, I am sure, it took years to bring people to the idea that it was possible to work together and while it may be fairly simple from here on in, it has been a long hard trail of negotiations on both sides. I am sure the Congress will agree on both sides it was very hard to bring them together on the idea they could ever work together. I agree completely with his idea that the solution of this is to be much desired, complete integration and fair treatment to all people, so that everybody is free to run his business as he sees fit.

Mr. JENSEN. I am saying, Mr. Wright, that I am sure I can say honestly—that no private utility any place in America, either wrote me or talked to me in opposition to the Texas contract.

Mr. WRIGHT. Mr. Wilkes testified before a Senate committee, speaking for all utilities in the South.

Mr. JENSEN. Before a Senate committee?

Mr. WRIGHT. Yes; before a Senate committee, speaking for all utilities in the South. He said in substance that he would be criminally negligent to his own stockholders if he entered into a contract similar to the Texas contract. He changed his mind after that, but that was his first statement.

Mr. JENSEN. I remember now he did make that statement, but he didn't, I don't think he made that statement to the House committee.

Mr. WRIGHT. I don't believe he did either. He made it in the Senate.

Mr. JENSEN. Other than that now, you will also admit, Mr. Wright, at that time after he had made the statement there were other utilities present in that area that took great issue with Mr. Wilkes?

Mr. WRIGHT. Yes; the 2 Oklahoma companies left the 16-company group and negotiated with me separately, primarily in the dissension and row over the position taken by Mr. Wilkes.

Mr. JENSEN. And Mr. Wilkes then, very shortly afterwards amended that statement to a very great degree, and, in fact, as I remember, after he had given consideration and studied that contract he admitted this was a pretty good contract.

Mr. WRIGHT. Yes; he has admitted it is a good contract and it is working well.

CONTINUING FUND

Mr. CANNON. Do you agree with Mr. Jensen's statement about the continuing fund?

Mr. WRIGHT. I recommended, as the committee knows, always, that there be a continuing fund and that it be maintained and that it be provided that the contracts continue operative, and that the Department of the Interior, on my recommendation, included in 1953 a continuing fund, and at that time it was deleted by Congress.

OPTION TO PURCHASE CLAUSE IN G. & T. CO-OP CONTRACTS

Mr. JENSEN. Well, now, Mr. Chairman, he has gone into this in an attempt to discredit my statement. I made a statement that the lease-purchase contracts carried a provision to the effect that after REA's had paid off their entire indebtedness, that the Southwestern Power, or the Interior Department, could pay the REA $10 and then the Southwestern Power Administration or the Interior Department or the Government, would own all of those transmission facilities.

Mr. WRIGHT. I don't take any issue that that was one of the features of the contracts most objectionable to Congress, on the basis of all the evidence available to me. I take no issue with that.

Mr. JENSEN. Well, do you still think that should be in?

Mr. WRIGHT. Yes; I have testified before this committee on this occasion, that I think the Government, in equity, ought to maintain certain rights or they ought to have compensation for relinquishing those rights, and the Government has recommended that not be done, and as far as I am concerned, that is ended.

I have learned to obey orders from the Congressman, and when I am given an order, submitted my recommendations, if they are contrary to it, I try to obey the order.

Mr. JENSEN. Well, you know, of course, that the REA's were objecting strenuously to that provision where the Government could pay $10 after they have paid off their indebtedness, and then take over the REA's and the transmission facilities for which the Government had appropriated the money to build originally.

You know that the REA objects to that strenuously, do you not?

Mr. WRIGHT. At the time the contracts were negotiated, there were objections to the insertion of the equity clause. It wasn't nearly as strenuous as it subsequently became, but they did object; yes.

Mr. JENSEN. Well, 4 of the 5 presidents of those transmission and generating REA's in the Southwest Power area came into my office about 3 years ago and said they certainly hoped that that provision we speak of, that takeover provision, could be knocked out, because, they said, they never did want to sign the contract with that provision in there, but they were told that was the only way they could get a contract.

Mr. WRIGHT. I haven't any doubt that that is true. They didn't want the provision in the contract in the first place, and I thought it was in the interest of the Government to have it in there. I still believe that, Mr. Congressman, and I believe that when the stipends are paid out, and they will be paid out with the exact lease payment check that the SPA extends to co-ops. In other words, I would con-

sider that just as in buying a house, you will send the payments to pay for the house, and when it is paid out, these people may tell us for the rest of the contracts they don't need us in the house, and why shouldn't we move out?

Mr. JENSEN. Well, Mr. Wright, maybe it is all right, or your independent thought is correct, but if you were to borrow money from the Federal Government to build a house, as many millions of people do, and after you had made all the payments on that home, then the Federal Government could come in and give you $10 and take the house away from you, what is the difference between those two things? And if that is fair, if that is good business and fair business to any citizen of America, then I do not know what fair or good business is, and one is exactly the same as the other, only you are dealing with many people in the REA, whereas in this other instance you deal with only one individual, in buying a home.

Mr. WRIGHT. Mr. Congressman, there is only this difference, in my opinion:

If you borrowed money from the Federal Government to buy a home and then the Federal Government entered into a 40-year lease with you to utilize that home and pay all the payments you needed to pay the Federal Government for the home, you absolutely would see to it that you had the house for certain usage during that time, and then at the end of the time you had a similar situation, I would admit I am not going to be any better off personally, whether the "house" is in or out, whether the clause is in or out, and you ordered it out, and I don't think there is any point in arguing it any more, because I am not going to put it in.

Mr. JENSEN. But every member of the REA's in that area, or any other area that borrowed money from Uncle Sam, is obligated to pay his proportionate share of that obligation to Uncle Sam, and he does it over a period of years, until it is paid off.

Mr. WRIGHT. Then the Federal Government is obligated under this long-term contract to pay it to the cooperative, too, to back him up.

Mr. JENSEN. Well, where the Federal Government loans money to anybody, and after that person has met all his obligations according to the contract, I do not care what they are, and then the Federal Government can say, "We are going to give you $1 or $10, and we are going to take your property away", that just isn't good Americanism in my book.

Mr. WRIGHT. I agree with you, because nobody is going to persuade you that is so, and I am not going to try to, and I didn't mean to do so.

Mr. JENSEN. That is all.

May I say this? The only difference between Members of Congress relative to the continuing fund was the amount. The question was: How much? It wasn't the question of whether we should save the REA's. It was a question of how much money was necessary to be appropriated in order that they could save their property.

Now, there was a difference of opinion, but there was no effort made on the floor of the House last year, to change the figure of $6 million. We accepted it. We accepted it without any debate, because we didn't want to take any chances of REA's suffering in that locality for lack of funds to carry on, and to meet their payments and to carry on their business.

Mr. CANNON. Is that your understanding, Mr. Wright?

Mr. WRIGHT. Mr. Chairman, I am not competent to judge what was the meeting of the minds in the committee—or not the meeting of the minds. I am not sufficiently familiar to agree or disagree. I know nothing about it.

Mr. CANNON. Well, the question was reactivation of the contracts, and you say that was essential.

Mr. WRIGHT. I do.

ARKANSAS CO-OP CONTRACT

Mr. HAND. Mr. Wright, do you have an existing contract with these Arkansas cooperatives?

Mr. WRIGHT. I had one with them, Mr. Congressman, which expired by virtue of its own terms, I believe in January 1955. January 1.

Mr. HAND. Does the electric cooperative make any attempt to supplement that contract?

Mr. WRIGHT. Yes; they received an allotment to construct a system and undertook to organize and hire an engineer and plan their system and I believe they were enjoined in the county court of Pulaski County, Ark., from proceeding any further with the matter.

The injunction was appealed ultimately to the Supreme Court of Arkansas, which held that this cooperative had no right to construct this project or proceed pursuant to their contract.

Mr. HAND. Did they build any generating facilities?

Mr. WRIGHT. No; they didn't build anything or didn't complete their engineering planning. I don't know if they spent any money at all.

Mr. HAND. Mr. Secretary, would you care to make any comment on the situation?

Mr. AANDAHL. Do I understand your question as being one as to whether that contract should now be renegotiated?

Mr. HAND. I think that is the ultimate purpose of my question, yes.

Mr. AANDAHL. In order to answer that question, I will have to make the general statement that I do not feel that the lease option-to-purchase contracts are a desirable type of contract. When I say that, I mean to make no exception to the fact that Congress has made money available and that we have reactivated the contracts that were previously signed.

Mr. JENSEN. With one exception, however. You left out the takeover part, did you not, the complete takeover, where the Government can pay $10 and then own the property.

Mr. AANDAHL. I want to further state I am in agreement that the option-to-purchase clause should be deleted in the amendments to those contracts and I feel we are properly doing that insofar as the contracts that were previously signed. They represent an obligation, I admit, on the part of the Government. I have no objection to the 2-year period in which an attempt was made to get some alternate contracts, but when that attempt was not successful I feel that we have done the right thing by reactivating those contracts and I think it is proper to delete the option to purchase.

But even when that is done I do not think that this particular type of contract is the desirable contract and insofar as I do not think it is a

desirable contract, I certainly would not want to see negotiations entered into for the purpose of developing another contract of that kind to expand the responsibility.

Mr. HAND. Would it not cost the Federal Government revenue if we entered into this type of contract in regard to comparable rights of some of the other co-ops?

Mr. AANDAHL. This is an expensive type of contract under which to operate and I think the testimony indicates that those original contracts were really negotiated as purchase contracts. That is why the option-to-purchase clause was put in. As you know, those contracts provide that the lease payment that SPA makes to the cooperatives is sufficient to amortize the Federal REA loan with interest during the period.

The SPA commits itself to pay the complete purchase price of those lines and in addition to that it commits itself to operate and maintain them and to make the replacements during the period. The contract was drafted and negotiated really as a contract that would be suitable for the Federal Government through SPA to purchase those lines from the cooperatives. I do not think that was desirable. I do not think those lines ever should be in the ownership of SPA.

I think we are proper in deleting the option-to-purchase clause, but when that is deleted we are paying too much for those contracts and that is why I do not think any further contracts of that type should be negotiated.

EXTENSION OF G. & T. CO-OP CONTRACTS

Mr. HAND. Mr. Wright, do you contemplate the extension of these co-op contracts?

Mr. WRIGHT. No, sir.

Mr. HAND. You do not pay any attention to it. Would that be, in your judgment, within reasonable distance of the transmission lines?

Mr. WRIGHT. The integration that would insure from that would be primarily an integration of moving that thermal power out of the northeast area and the only hydropower that would go in there quite likely would be a very small amount of hydropower and the losses would probably be negligible.

Actually, the loss would probably be overcome by the introduction of thermal power on the northeast end of this central system, so that the integration with that particular unit up there would probably be feasible in marketing to the extent of the service of the northeast group cooperatives only with the expansion of more power and their thermal plant would not be feasible any more than it would in the northwest area.

POWER DEMAND AND SUPPLY

Mr. HAND. Do you have a present shortage in your area now, your southwestern area, Mr. Wright?

Mr. WRIGHT. You have a shortage of types of power, Mr. Congressman. This hydro power is peaking power. In the southwest area, they have far less peaking power than it would be proper to utilize in the total systems.

Let me explain it this way, and the way it works is very simple: This area now doesn't have anybody that isn't getting electric power

that doesn't want it, but between now and the time you can build anything there will be load growth in this area sufficient to absorb any size plant that you can conceive of almost, and the type of plant needed is peaking plants so that peaking power balances off the thermal power.

Right at the moment we have in this area only about six hundred thousand kilowatts of hydroelectric peaking power; at the most, 700,000 kilowatts; and the Union Electric Co. knows that it can put in and utilize in 1 unit 800,000 kilowatts of daily peaking power just below St. Louis, so we need a vast amount of peaking power and the load growth could be handled by the installation of peaking power. That load is now carried by old, inefficient, high-cost intermittently operating plants that would simply be closed down and everybody would be better off.

Mr. HAND. You mentioned the Union Electric. Is that some particular plant or group of plants that they contemplate serving?

Mr. WRIGHT. The Union Electric recently announced publicly that they are studying and are supposed to construct, if the study is determined to be feasible, and they are quite far advanced, a so-called pump-back hydroelectric project near St. Genevieve, Mo., which will consist of two dams, a low-level dam and a high-level dam, and they would fill those dams by pumping water out of the Mississippi River to fill them the first time and then at nighttime they would pump the water from the low reservoir up into the high reservoir, utilizing 3 kilowatt-hours per unit of thermal power and make 2 kilowatt-hours of hydropeaking power next day.

Mr. HAND. Yes; you referred yesterday to the nature of that plant. My question was whether they are anticipating this additional need for power.

Mr. WRIGHT. Yes.

Mr. HAND. By the addition of some new industry there in that area or group of industries. Do they have specific plans?

Mr. WRIGHT. We are anticipating the need because of load growth and the peaking power to meet daily peaks. They have an excess of thermal power at night which they would like to convert into peaking power in the daytime and they know that by using 3 hours at night they can get back 2 hours in the daytime. While the 3-hour power at night costs them just the fuel to generate it, say, 3 mills a kilowatt-hour, this stuff they get back in the daytime is worth 15 or 16 mills.

Mr. HAND. When you anticipate shortages in the future, is that because of new industries that are being attracted into the area?

Mr. WRIGHT. There will not be shortages in the sense that nobody gets power service, but power, instead of being supplied on peak by hydroplants, if you don't build them, will be supplied by high-cost thermal plants, which is not the best way to bring that kind of power. Somebody will build some kind of a plant to serve anything that is needed, but the industry will be slowed down by virtue of the additional high cost if you don't put in this best way to make peaking power for the area.

Mr. HAND. Of course there is no objection in your mind or in the minds of your administration to private capital constructing hydroelectric plants there or anywhere; is there, Mr. Wright?

Mr. WRIGHT. There never has been any objection, in my mind. I have always thought, as I told the committee yesterday, I thought

each dam was a problem unto itself and there are many dam sites which or where I believe the public interest is such that the Federal Government ought to build them instead of with private capital. Again, I don't know that I agree with the people I work for, but I am telling you what I think.

Mr. HAND. Well, why would you say that, if private capital were ready, willing, and able? Let us assume they might be ready to build hydroelectric plants.

Mr. WRIGHT. The private capital that might develop a particular project might not be able to utilize the output of that project electrically to the great good that could be done if it were publicly developed, in my judgment.

Mr. HAND. Are there some other factors in the construction?

Mr. WRIGHT. No, not factors of construction, they are factors of utilization.

Mr. HAND. There is no objection, in your mind, for example, to give you a specific example, of the Conowingo hydroelectric plant at Conowingo, Md., which is entirely financed by the Philadelphia Electric Co.?

Mr. WRIGHT. Not a bit. As a matter of fact, they have been integrated with the Washington area and I have seen them through the dispatcher's office here swing the Washington area load on and off the Conowingo project.

I don't know if this electricity came from Conowingo and possibly fed from the Philadelphia area to its facilities here.

Mr. HAND. I understand Pepco has contemplated the construction of a hydroplant. Do you know anything about it?

Mr. WRIGHT. No.

Mr. HAND. You could not find any objection to private capital developing even hydroelectric power where feasible, and they are ready, willing and able?

Mr. WRIGHT. Not a bit.

Mr. HAND. In other words, it is not your opinion that it should be the exclusive function of the Federal Government to build these plants?

Mr. WRIGHT. It is not.

Mr. HAND. I have no quarrel whatever with your opinion, Mr. Wright, concerning the controversy we were having yesterday and again a little bit today about the 50-year base or the 100-year base, but you are not familiar, are you, with the Budget Circular A–47 under the former administration which promulgated a 50-year base?

Mr. WRIGHT. Yes, sir, I am familiar with that.

Mr. HAND. That is all, thank you.

SPA SYSTEM STATISTICS

Mr. TABER. I wonder if you could give me a little information. I have in front of me last year's figures on this subject. Have you got them?

Mr. WRIGHT. Yes, sir.

Mr. TABER. On page 21 there is a list of names of production dams.

Mr. WRIGHT. Yes.

Mr. TABER. Are they the only dams that presently handle the production end of it?

Mr. WRIGHT. No, I believe, in addition to that, there is the Whitney Dam. No, I see the Whitney Dam is listed. You are right, those are the only ones.

Mr. TABER. Table Rock is not?

Mr. WRIGHT. Table Rock is not and it won't be for a couple of years.

Mr. TABER. The others are all in?

Mr. WRIGHT. That is correct, sir.

Mr. TABER. And installed to practically full capacity?

Mr. WRIGHT. No, they do not have all of the units in, but the units they have in are operating. For instance, Denison Dam is built to accommodate five units. There are two units in the Denison Dam. The Norfork Dam is built to accommodate four units. There are two units in the Norfork Dam.

The Bull Shoals Dam is built to accommodate eight units. There are four units in the Bull Shoals Dam.

All of the units are in the Fort Gibson.

Mr. TABER. How many?

Mr. WRIGHT. In Fort Gibson, we have 3; I believe we have 2 or 3 units. Their total is 45,000 kilowatts and they are all in.

In the Tenkiller Ferry we have two units and both of them are in.

In Blakley Mountain we have two units and both of them are in. In the Narrows Dam we have two units and both of them are in. In the Table Rock Dam there is the question of whether the initial installation should be 2 or 3 or 4 units and in my judgment it should be at least 3 and preferably 4.

The Whitney Dam has two units and they are both in.

Mr. TABER. Are you able to give us the production power from each of those dams?

Mr. WRIGHT. Yes, sir; I can give you something.

Mr. TABER. Now, I have a table here. I am not going to ask you to read it to me. I am going to ask you to put a table in the record.

Mr. WRIGHT. I will be very glad to do that.

Mr. TABER. On page 224 of the hearings on the eastern section of the public works bill last year there was a table and there in the first column was listed the names of the dams and in the second column the estimated costs and in the third column the operation and maintenance of the plant. Now, out of what funds do you pay or is paid the operation and maintenance?

Mr. WRIGHT. Out of the funds appropriated to the Department of the Army, Corps of Engineers.

Mr. TABER. The operation and maintenance is in the next column and the marketing costs are in the next column.

Now, I think you can handle this much better, if you are able to, by using this table on which the Southeast is set up.

Mr. WRIGHT. We will prepare a table similar to it for the record.

Mr. TABER. Now, I wanted to go through this so that if there was something that you could not give me you could say so and I could find some other way of getting it.

Mr. WRIGHT. Up to now I think we can give you everything you have talked about.

Now, this distribution costs we cannot segregate by dams, because all of the dams feed into a common system.

Mr. TABER. You will give the total?

Mr. WRIGHT. We can give you a total, yes, sir.

Mr. TABER. All right. Then the next one is "Installed generating capacity."

Mr. WRIGHT. Yes, sir.

Mr. TABER. That is in kilowatts.

Mr. WRIGHT. Yes, sir.

Mr. TABER. The next one is "Peak generation."

Mr. WRIGHT. Yes, sir.

Mr. TABER. The next one is "Energy, kilowatt hours produced during the year."

Mr. WRIGHT. Yes, sir.

Mr. TABER. You can give that?

Mr. WRIGHT. Yes, sir.

Mr. TABER. The next one is "Status of revenues, fiscal year 1955." You can give that correctly, I expect?

Mr. WRIGHT. Yes, sir.

Mr. TABER. The way you handle it you would not be able to give the revenue by unit, or would you?

Mr. WRIGHT. No, sir. It would be a total revenue.

Mr. TABER. And the next one is "Fiscal 1955." You could give that correctly?

Mr. WRIGHT. Yes, sir.

Mr. TABER. On "Fiscal 1956" I expect you have to give only part of that.

Mr. WRIGHT. We can give the actual through March 31.

Mr. TABER. I think you had better put another column beyond what it is here in the record, "Actual through March 31 and estimated for the year."

Mr. WRIGHT. Yes, sir.

Mr. TABER. You can do that?

Mr. WRIGHT. Yes, sir.

Mr. TABER. Maybe you could give the estimate of the power in the year?

Mr. WRIGHT. Yes, sir.

Mr. TABER. Now, I have 3 or 4 other questions that I want to ask.

Mr. RABAUT. Before you leave that, Mr. Taber, are you asking what the power would be of the generators not yet installed?

Mr. TABER. I have not asked that. All right, put in another column.

Mr. RABAUT. I think there are 10 of them.

Mr. TABER. All right, put in another column that will show what might be produced with the generators.

Mr. WRIGHT. Ultimate capacity.

(The matter referred to appears on p. 155)

Mr. TABER. Yes. Now, I have some other questions that I would like to ask because I think that we ought to have these things in front of us in order to size up this operation.

Now, how many customers do you have?

Mr. WRIGHT. Well, my guess is we would have one hundred and some customers. I can give you a detailed list for the record.

Mr. TABER. I do not care about the list. There are some things about it I would like.

Mr. WRIGHT. I find there are about 56.

REYNOLDS ALUMINUM CONTRACT

Mr. TABER. This Reynolds Aluminum contract. Was that entered into sometime about 1950?

Mr. WRIGHT. 1952 in January.

Mr. TABER. 1952 in January. Now, that extends for how long?

Mr. WRIGHT. For 30 years.

Mr. TABER. And at what rate do you supply electricity to them?

Mr. WRIGHT. Electricity is supplied at a sliding scale rate in the contract, which gives the Government a return of 5.2 mills per kilowatt-hour at the dam for its peaking energy and the actual rate in the contract for the first 5 years is at 5.2.

The contract allows an adjustment upwards during its life not to exceed 5.72 for the second 5 years and not to exceed 5.98 for the third 5 years and not to exceed 6.11 for the fourth 5 years and not to exceed 6.24 for the fifth 5 years and not to exceed 6.37 for the last 5-year term of the contract.

So, it has a sliding rate adjustment from 5.2 to 6.37 during the life of the contract.

Mr. TABER. All right, maybe you have testified to what the other rates were on the system. Are there several different rates or not?

Mr. WRIGHT. This rate in the aluminum contract is a different rate in that it is based on the application of the A rate to peaking power when it was made.

Now, the A rate itself is a rate requiring a demand charge of $1.35 for the first 2 hours and 4 mills for all above that and on the basis of that rate this aluminum contract rate would have been 6.75 mills at the load center.

Actually, the aluminum rate was figured to be 6.2 mills at the load center and 1 mill wheeling charge was allowed the wheeling company who moved it in the negotiation.

The other rate we have is a peaking rate of 7 mills a peaking hour for 2 kilowatt-hours. The rate on the aluminum contracts are identical.

Mr. TABER. Who uses that?

Mr. WRIGHT. Anybody who wants to buy peaking power of 200 hours would get a 7-mill rate. If they buy A rate power they would get that block of power for 6.75 mills. The only reason they weren't the same was we couldn't find any way to state the rate in dollars and cents that would give us 6.75 mills.

SOUTHWEST GAS & ELECTRIC CONTRACT

Mr. TABER. Now, these company transactions that you have, as I remember it, I may not have them all, you have the Southwest Gas & Electric. You have a deal with them?

Mr. WRIGHT. Yes, sir.

Mr. TABER. And what rate do they get when you sell power to them?

Mr. WRIGHT. They pay out the total of $207,000 a year for the output of the Narrows Dam. And in that contract they agreed to sell back to the Government delivered at load center for REA customers twice as much firm power as the project has by itself or 5,000 kilowatts.

Mr. TABER. Is the power they can deliver back to you thermal power?

Mr. WRIGHT. It is continuously available power partly from their thermal power and partly from the Narrows Dam project, depending on whether it is being scheduled or not.

Mr. TABER. Have you told us what they pay you?

Mr. WRIGHT. No, sir.

Mr. TABER. What do they pay you for the Narrows Dam power?

Mr. WRIGHT. The effect of that contract, since it is an interchange, without complete financial evaluation, has to be taken into the total effect of it and we found out what has happened, we get a return for the total power produced at Narrows Dam of 9.96 mills a kilowatt-hour.

Actually, for the power it paid 50.98 mills, nearly 5 cents a kilowatt-hour, because it retains practically none. All they got is the capacity. That is not an unusual charge for capacity without energy. It is a very fair contract.

TEXAS POWER AND LIGHT CONTRACT

Mr. TABER. Well, the Texas Power & Light is another one you have a deal with?

Mr. WRIGHT. Yes, sir.

Mr. TABER. And how much electricity do they get from you and at what rate?

Mr. WRIGHT. They get from us 30,000 kilowatts and 5,833,333 hours of peaking energy a month and they get an average of 5 million kilowatt-hours of secondary energy a month for which they pay us $52,000.

Mr. TABER. How much of secondary power is it?

Mr. WRIGHT. Five million a month and it is worth about a mill and a quarter a kilowatt-hour to a mill and a half a kilowatt-hour. Valuing it at a mill and a half, that would make $7,500 of the $52,000 payment for secondary power, which would leave you about $44,000 as payment for the primary power of 5,833,000 kilowatt hours.

Mr. TABER. Now, what rate does that figure come to for the peaking power and the secondary power?

Mr. WRIGHT. It figures out about a mill and a half for the secondary and about 7½ mills for the primary or peaking power.

Mr. TABER. Now, Oklahoma Gas. How many dollars do they pay you and how many do you pay them?

Mr. WRIGHT. The net exchange in the Texas contract is indicated by one tabulation, which is placed in the record, and it shows this: that every month at the end of the month under the present exchange the Texas company owes the Government $44,050 and the Government owes the Texas company $40,000. They send us a check for $3,850 for the difference and they furnish us power equivalent to 20,000 kilowatts and about 7,300,000 a month for sales to preference customers.

The net result of that is that the Government, during its entire operation under the Texas contract, has had a net return on its hydro peaking power of 8.26 mills a kilowatt-hour and it has collected from Texas customers 5.49 mills a kilowatt-hour for the power that is de-

livered to them. The rest of the payment came from the Texas company.

Mr. TABER. Is that substantially a thermal power proposition they serve to you?

Mr. WRIGHT. Yes, it is. Very little of the hydro gets to any of these preference customers.

Mr. TABER. Well, what the Texas company turns over to you is mostly thermal power?

Mr. WRIGHT. That is true, because of the location of the dam and their system. The Dennison Dam from which that power comes is located here on the Red River on the north boundary of Texas. Now, all of the customers served are served from their south [indicating] all the way down to Beaumont, Tex., and all the way west out here [indicating] to Comanche, Tex., near Brownwood.

Now, the Texas company has a big steam plant located here at Trinidad and anything south of Trinidad will be all-thermal power. Your hydropower would all be used in the area adjacent to Dennison Dam in the Texas system. You simply have a change of power.

Mr. TABER. In other words, they use the power they get from Dennison right in that area?

Mr. WRIGHT. Yes, sir.

Mr. TABER. And they supply you with the thermal power down farther south?

Mr. WRIGHT. That is correct and farther west.

OKLAHOMA GAS AND ELECTRIC CONTRACT

Mr. TABER. Now, the Oklahoma Gas & Electric. Can you give me the same picture approximately on that?

Mr. WRIGHT. There are two companies, both Public Service and Oklahoma Gas & Electric Co., in the Oklahoma contract. The contract is between the Government and two Oklahoma companies. The results of that operation are that we have received 1.25 mills a kilowatt-hour for all of the secondary power delivered under that contract and that has been a total of $3 million since its inception.

Mr. TABER. How much was it during the current year; this last year, I mean?

Mr. WRIGHT. In 1955 it was 7,600,000 and in 1956, for the first 6 months, it was 8,400,000.

Mr. TABER. In 1956 it is what?

Mr. WRIGHT. 8,494,000 for the first 6 months.

Mr. TABER. In other words, it is a great deal more than it was in 1955?

Mr. WRIGHT. Yes. Dennison still has overflowed a part of the time, during the first part of fiscal 1956.

Mr. TABER. Is that $8 million?

Mr. WRIGHT. That is 8 million kilowatt-hours of secondary power, for which we received a mill and a quarter.

Mr. TABER. I see. How many dollars does that make?

Mr. WRIGHT. That is 1¼ times 8 million, which would be about $10,600.

Mr. TABER. I see.

Mr. WRIGHT. Now, we generated, we delivered to the Texas companies a total of 384,527,000 kilowatt-hours of primary power

and for that we received 6.93 mills per kilowatt-hour average from the company and the cooperatives and from the companies themselves we received 7.6 mills.

Mr. TABER. And how much money did you get from them?

Mr. WRIGHT. I haven't computed out the total dollars.

Mr. TABER. Will you put that in right here?

Mr. WRIGHT. Yes, sir; I will be very happy to do that. Yes, I have that, too. I beg your pardon. That is, from the Oklahoma companies and we received the sum.

Mr. TABER. Give me the 1955 and the 1956.

Mr. WRIGHT. Yes, sir. It is in the record already in the tabulation which I gave you. We received from the Oklahoma companies $68,246.54, being the total energy, and we received $9,521.38 for secondary energy and we received $66,203 for the first 6 months of primary energy and we received $10,618 for secondary energy.

That is in the tabulation which I placed in the record yesterday.

Mr. TABER. Yes. Now have you got any other customers besides them among the public utilities?

REYNOLDS ALUMINUM CONTRACT

Mr. WRIGHT. The aluminum contract.

Mr. TABER. Yes. Well, you told us about that.

Mr. WRIGHT. We have a contract that is not with a company.

Mr. CANNON. May I ask you there, what is the date of this contract?

Mr. WRIGHT. I believe it is January 19, 1952. It is in January of 1952.

Mr. CANNON. Do you agree it was approximately that time, which was during the Korean war?

Mr. WRIGHT. Yes.

Mr. TABER. How much money does the aluminum company pay you? Did I get that?

Mr. WRIGHT. That contract is a triparty contract signed by the Arkansas Power & Light Co., the Reynolds Metal Co. and the United States Government; and under that contract the payments are made to the Government by the Arkansas Power & Light Co. and I believe they pay the Government $1,800,000 a year.

Mr. TABER. $1,800,000 you said?

Mr. WRIGHT. Well, I can give it to you by 6-month intervals exactly. The last 6 months of fiscal year 1954 we received $939,826.63 and for the fiscal year 1955, we curtailed the delivery of power because of the drought and we received $768,868.88, and for the first 6 months of fiscal year 1956 we received $944,368.75, and the estimated annual revenue will run between $1,800,000 and $1,900,000 a year.

Mr. TABER. Now, is that the only transaction that you have with the Arkansas Power & Light?

Mr. WRIGHT. That is, sir.

Mr. TABER. You do not have any back and forth deal like you do with the other concerns?

Mr. WRIGHT. No, we have this kind of contract with the Arkansas Power & Light Co. We deliver the entire output of Blakley Mountain Dam into their system at the Blakley Mountain Dam and they deliver the same amount of power and energy back to us on this main grid, anywhere on it we want it.

It is just simply an exchange of power without any charge on their part for moving it. There are no rates in the contract. We just let them take Blakley Mountain, which is near a point where they want some power, and they give us power back on the main grid where we want it.

G. AND T. CO-OP CONTRACTS

Mr. TABER. Now, do you have these G. and T. Co-ops for which you use this continuing fund and buy power from them? What is the purpose of that? I am stating to you frankly that I have not sat in on the hearings on this much before so I do not know much about it.

Mr. WRIGHT. Mr. Congressman, that involves the transmission systems of certain generating and transmission cooperatives and the powerplants, the thermal plants of three of them.

I will recite what happens in one and the same thing happens on the others. Taking the one in western Oklahoma, they have 69-kilovolt transmission lines serving all the distribution cooperatives in the western half of Oklahoma. They have a thermal plant at Anadarko of 30,000 kilowatts. This contract provides that the Government will pay to the cooperative the amount of money it cost the cooperative to amortize this system and the amount of money it cost them to maintain and operate it for the use of the capacity of this system in delivering power and energy.

Then, the Government utilizes that system to deliver power and energy to every one of these load centers at whatever rate it has at the load center for such service. It also buys the entire output of this thermal plant any way the Government wants to schedule it to fit in with its hydro plant at a certain specified rate.

In the case of this project that is 4.2 mills a kilowatt-hour. The purpose of the continuing fund is to enable the Government to make the payments that it has to make to the cooperatives because of those things it is buying and serving.

Mr. TABER. Then, they buy power from you, do they?

Mr. WRIGHT. Yes; they buy their entire power requirements back from the Government and the committee has now directed that the contracts be amended so that only net balances are paid.

When the contracts have been so amended, as soon as we get them amended, then the amount of requirements of the continuing fund would be reduced from $6,400,000 to $4,103,000.

OPERATING STATEMENT

Mr. TABER. I think in order to get this picture so we can understand it, we ought to have an operating statement from you showing the source of your receipts and showing the disbursements that you make for power. I do not care about showing the details of all of your co-op customers, but I do want to show the things by items, what you get from aluminum, Reynolds Aluminum, and what you get from these different utilities, and I think you should show what you pay to these utilities or co-ops that you buy power from.

Mr. JENSEN. Private utilities.

Mr. TABER. Yes; it should show that, sure.

I do not care about your receipts from the smaller co-ops, the detail of your receipts, you can lump that as far as I am concerned in your picture.

Mr. WRIGHT. For what period do you wish this? We can furnish it to you very easily.

Mr. TABER. For the fiscal year 1955 and for the fiscal year 1956, insofar as you have it.

Mr. WRIGHT. We could even give it to you by estimates up to the year 2009, if you want it.

Mr. TABER. I do not want that. I think if you have that for those 2 years, the actual figure for the first 9 months of 1956, that will be all right.

Mr. WRIGHT. We would be very happy to do that, Mr. Congressman.

Mr. TABER. And then I think we ought to have your whole operating expense.

Mr. WRIGHT. Yes, sir. We will be very happy to do that.

Mr. TABER. All right, that is about what I had in mind.

(The matter referred to appears on p. 154.)

GREERS FERRY AND BEAVER DAM

Mr. CANNON. Now, I want to ask you two more questions. The Greers Ferry Dam would produce power which could be substituted for the power which the Arkansas power and Light now takes from Bull Shoals and would thereby free a similar amount of power which could be used by the electric cooperatives in Missouri, Oklahoma, and Texas?

Mr. WRIGHT. That is correct.

Mr. CANNON. For that reason the Greers Ferry Dam would be highly advantageous.

Mr. WRIGHT. That is correct.

Mr. CANNON. Now, we were also told that the Beaver Dam offered potential power above any other dam out there. We were told it was the finest location for a dam that could be found and that it would provide 64,000 kilowatts, dependable capacity, and because it is on the river above the Table Rock and Bull Shoals Dams it would provide an additional 58,000 kilowatts in these 2 lower dams. That is a total of 122,000 kilowatts, which makes Beaver Dam a very feasible project.

If possible, this dam should be started because of its increased effect on the dams below and is also in the area where it can be connected to the SPA system without too much cost. Do you approve of that statement?

Mr. WRIGHT. Yes, sir; I concur in that statement.

Mr. CANNON. Is there anything further, gentlemen?

Mr. TABER. Would you point out where this aluminum plant is on the map and tell us which one of these dams is nearest to it?

Mr. WRIGHT. The aluminum plant is located near Arkadelphia, Ark., which is right here [indicating] and it is immediately apparent that the closest dam to it is Blakley Mountain, so that the Arkansas Power & Light Co. are very happy to have a contract with us to take Blakley Mountain into their system, which is near the aluminum plant, and give us back to the system the power they had been taking from Bull Shoals and it was a good deal for us. We both liked it.

Mr. RABAUT. One other point I have here, You know, before, when you asked for the customers, you said you were not interested

in all of them. That was in the past. Why do you not put them all in?

Mr. TABER. All right, put them all in.

(The matter referred to is as follows:)

Revenues by class of customers; and payments for expenses from appropriations, actual fiscal year 1955, and estimated fiscal year 1956

	Fiscal year 1955 actual	Fiscal year 1956 estimated
Revenues:		
Revenue from the sale of power and energy by class of customers:		
Electric cooperatives	$2,123,439	$4,914,178
Municipalities	701,129	799,901
Private electric utilities	1,010,143	2,208,465
Public authorities	241,016	218,924
Total revenues	4,075,727	8,141,468
Expenditures:		
Payments to cooperatives for the purchase of power and service charges	1,328,951	5,115,000
Payments to private utilities for the purchase of power and service charges	160,215	135,000
Expenditures for operating expenses	863,133	1,040,643
Total expenditures	2,352,299	6,290,643
Excess of revenues over expenditures	1,723,428	1,850,825

Installed and ultimate capacity of projects in commercial operation, fiscal year 1956

[Kilowatts]

Project	Installed capacity	Ultimate capacity	Project	Installed capacity	Ultimate capacity
Blakely Mountain	75,000	75,000	Norfork	70,000	140,000
Bull Shoals	160,000	320,000	Tenkiller Ferry	34,000	34,000
Denison	70,000	175,000	Narrows	17,000	25,500
Fort Gibson	45,000	67,500	Whitney	30,000	30,000

Costs, revenues, and power production by projects, southwestern power area

Project	Project costs			Power produced in fiscal year 1955			Status of Revenues [3]			
								Fiscal year 1956		
	Estimated total construction costs [1]	Operation and maintenance [1]	Marketing costs, fiscal year 1955	Installed generating capacity (kilowatts) [2]	Peak generation (kilowatts)	Energy (kilowatt-hours)	Fiscal year 1955, actual	As of Mar. 31, 1956, actual	Apr. 1, 1956 to June 30, 1956 estimated	Total estimated
Bull Shoals	$80, 727, 000	$262, 000		160, 000	174, 000	241, 117, 000				
Norfork	30, 230, 000	165, 000		70, 000	62, 000	23, 744, 900				
Blakely Mountain	32, 952, 000	172, 000								
Tenkiller Ferry	23, 772, 000	153, 200		34, 000	39, 000	53, 947, 540				
Fort Gibson	44, 857, 000	223, 570		45, 000	51, 000	70, 698, 900				
Denison	62, 208, 000	287, 200		70, 000	81. 000	140, 319, 000				
Narrows	13, 783, 000	106, 000		17, 000	17, 600	29, 232, 980				
Whitney	43, 988, 300	132, 500		30, 000	29, 000	30, 056, 000				
Total	332, 517, 300	1, 501, 470	[4] $2, 695, 886	426, 000	453, 600	589, 116, 320	$4, 075, 727	$6, 110, 354	$2, 031, 114	$8, 141, 468

[1] This data obtained from Corps of Engineers 1954 allocation reports.
[2] Nameplate rating of installed capacity.
[3] Marketing costs are not allocated to projects, as the southwestern power system is integrated with private utilities and generation and transmission cooperative systems. This amount includes costs for the purchase of power and service charges of $1,839,855.
[4] Revenues are not allocated to projects due to the integration of systems as described in note 3.

LIST OF CUSTOMERS BY CLASS AS OF APRIL 1956

MUNICIPALITIES

Anadarko, Okla.
Clarksville, Ark.
Crescent, Okla.
Eldorado, Okla.
Goltry, Okla.
Granite, Okla.
Hermann, Mo.
Hominy, Okla.
Lamar, Mo.
Lexington, Okla.
Paris, Ark.[1]
Poplar Bluff, Mo.
Purcell, Okla.
Ryan, Okla.
Sikeston, Mo.
Skiatook, Okla.
Spiro, Okla.
Springfield, Mo.
West Plains, Mo.
Wetumka, Okla.
Yale, Okla.

[1] Contract effective January 13, 1956. Service to begin May 20, 1956.

GOVERNMENT INSTALLATIONS

Altus Air Force Base, Altus, Okla.
Fort Sill, Okla.
U. S. Naval Ammunition Depot, McAlester, Okla.
U. S. Naval Air Technical Training Center, Norman, Okla.
Vance Air Force Base, Enid, Okla.

DISTRIBUTION COOPERATIVES

Canadian Valley Electric Cooperative
Choctaw Electric Cooperative
Deep East Texas Electric Cooperative
East Central Oklahoma Electric Cooperative
Fannin County Electric Cooperative
Farmers Electric Cooperative
Grayson-Collin Electric Cooperative
Hunt-Collin Electric Cooperative
Kaufman County Electric Cooperative
Kiamichi Electric Cooperative
North Arkansas Electric Cooperative
Peoples Electric Cooperative
San Houston Electric Cooperative
Southeastern Electric Cooperative
Upshur Rural Electric Cooperative
Wood County Electric Cooperative

G. & T. COOPERATIVES

Brazos Electric Power Cooperative
Brazos Electric Power Cooperative—Whitney contract
Central Electric Power Cooperative
KAMO Electric Cooperative
M. & A. Electric Power Cooperative (Doniphan)
M. & A. Electric Power Cooperative (powerplant)
N. W. Electric Power Cooperative
Sho-Me Power Corporation (Doniphan)
Sho-Me Power Corporation (Mansfield-Maries)
Sho-Me Power Corporation (West Plains)
Western Farmers Electric Cooperative

PRIVATE UTILITY COMPANIES

Arkansas Power & Light Co.
Oklahoma Gas & Electric Co.
Public Service Company of Oklahoma
Southwestern Gas & Electric Co.
Texas Power & Light Co.

Mr. CANNON. All right, the committee will adjourn at this time. This concludes our hearing on the Southwestern Power Administration and at 2 o'clock this afternoon, or rather 2:15 this afternoon we will take up some remaining items to be considered.

WEDNESDAY, MAY 2, 1956.

TENNESSEE VALLEY AUTHORITY

WITNESSES

HERBERT D. VOGEL, CHAIRMAN OF THE BOARD OF DIRECTORS
H. A. CURTIS, DIRECTOR
A. J. WAGNER, GENERAL MANAGER
R. A. KAMPMEIER, ASSISTANT MANAGER OF POWER
C. E. BLEE, CHIEF ENGINEER
C. H. YOUNG, MANAGER OF CHEMICAL ENGINEERING
J. H. WALTHALL, DIRECTOR OF CHEMICAL DEVELOPMENT
J. C. SWIDLER, GENERAL COUNSEL
RICHARD KILBOURNE, DIRECTOR OF FORESTRY RELATIONS
L. E. ELLIS, BUDGET STAFF
L. J. VAN MOL, CHIEF BUDGET OFFICER

Amounts available for obligation

	1955 actual	1956 estimate	1957 estimate
Appropriation	$120,000,000	$27,053,000	$5,357,000
Unobligated balance brought forward	1,068,000		6,500,000
Total available for obligation	121,068,000	27,053,000	11,857,000
Unobligated balance carried forward		−6,500,000	
Unobligated balance rescinded			−6,500,000
Obligations incurred	121,068,000	20,553,000	5,357,000

Analysis of transfers to revolving fund

	1955 actual	1956 estimate	1957 estimate
Obligations incurred during the year (total transfers to revolving fund)	$121,068,000	$20,553,000	$5,357,000
Transfers above are distributed as follows:			
Out of current authorizations	120,000,000	20,553,000	5,357,000
Out of prior authorizations	1,068,000		

Consolidated amounts available for obligation

	1955 actual	1956 estimate	1957 estimate
Income:			
Transferred from general fund appropriation account	$120,000,000	$27,053,000	$5,357,000
Corporate income	214,525,825	248,227,000	257,258,000
Unobligated balances brought forward:			
Appropriated funds	52,266,056	65,107,921	23,060,000
Power proceeds	36,755,746	42,918,971	51,780,971
Nonpower proceeds	5,465,224	7,263,895	6,587,000
Continuing fund	1,000,000	1,000,000	1,000,000
Inventories	28,036,686	29,168,097	36,458,097
Total available for obligation	458,049,537	420,738,884	381,501,068
Payments to Treasury:			
Retirement of bonds	−15,000,000	−14,000,000	
Payment on power investment	−35,000,000	−45,000,000	−75,000,000
Payment of nonpower proceeds	−5,465,224	−7,263,895	−6,587,000
Unobligated balance rescinded			−6,500,000
Unobligated balances carried forward:			
Appropriated funds	−65,107,921	−23,060,000	
Power proceeds	−42,918,971	−51,780,971	−49,998,971
Nonpower proceeds	−7,263,895	−6,587,000	−6,488,000
Continuing fund	−1,000,000	−1,000,000	−1,000,000
Inventories	−29,168,097	−36,458,097	−38,037,097
Adjustments for changes in inventories	1,131,411	7,290,000	1,579,000
Total obligations	258,256,840	242,878,921	199,469,000

Obligations by activities

Description	1955 actual	1956 estimate	1957 estimate
ACTIVITIES FINANCED FROM APPROPRIATED FUNDS (TRANSFERS FROM THE GENERAL FUND)			
Acquisition of assets			
Navigation, flood control, and power program:			
Projects contributing to power supply:			
Boone	$65,201		
Fort Patrick Henry	187,041		
Additional hydro units:			
Hales Bar 15 and 16	−933		
Hiwassee 2	1,298,639	$1,018,000	
Cherokee 3 and 4	21,347		
Chatuge 1	182,791	125,000	
Nottely 1	1,015,474	1,014,000	
Fontana 3	−28,537		
Douglas 4	83,489		
Johnsonville steam plant	380,590		
Widows Creek steam plant	1,630,815	905,000	
Kingston steam plant	23,538,003	13,125,000	$1,245,000
Shawnee steam plant	16,986,244	9,658,000	1,206,000
Colbert steam plant	12,376,050	7,019,000	95,000
John Sevier steam plant	19,906,489	9,102,000	1,284,000
Gallatin steam plant	16,421,013	16,976,000	1,909,000
Total projects contributing to power supply	94,063,716	58,942,000	5,739,000
Transmission system facilities	3,176,520	1,260,000	
Power service building	413,174	22,000	
Additions and improvements at completed projects	734,398	674,000	442,000
Navigation facilities	181,526	606,000	7,630,000
Flood control facilities		49,000	300,000
Investigations for future projects:			
Current	72,155	173,000	172,000
Writeoff of Chilhowee project	−66,369		
Distribution of administrative and general expenses	1,564,807	1,025,000	321,000
Total navigation, flood control, and power program	100,139,927	62,751,000	14,604,000
Fertilizer and munitions program:			
Chemical facilities	937,382	556,000	1,249,000
Distribution of administrative and general expenses	28,981	27,000	40,000
Total fertilizer and munitions program	966,363	583,000	1,289,000
General service activities:			
General facilities	548,871	325,921	54,000
Distribution of administrative and general expenses	3,755	8,000	8,000
Total general service activities	552,626	333,921	62,000
Total acquisition of assets	101,658,916	63,667,921	15,955,000
Expenses			
Navigation, flood control, and power program:			
Navigation operations	263,216	246,000	253,000
Flood-control operations	175,543	175,000	211,000
Multipurpose reservoir operations	2,170,690	2,066,000	2,260,000
Distribution of administrative and general expenses	184,437	197,000	225,000
Total navigation, flood control, and power program	2,793,886	2,684,000	2,949,000
Fertilizer and munitions program:			
Fertilizer and munitions development	2,269,484	2,201,000	2,446,000
Distribution of administrative and general expenses	87,069	100,000	110,000
Total fertilizer and munitions program	2,356,553	2,301,000	2,556,000
Resource development program:			
Resource development	336,370	400,000	400,000
Distribution of administrative and general expenses	43,869	44,000	50,000
Total resource development program	380,239	444,000	450,000
General service activities: Maintenance of bridges financed by others on TVA dams	1,900	4,000	7,000
Total expenses	5,532,578	5,433,000	5,962,000

Obligations by activities—Continued

Description	1955 actual	1956 estimate	1957 estimate
Changes in Working Capital			
Inventories and property transfers:			
General inventories	−$30,086		
Property transfers	−3,273		
Total changes in working capital	−33,359		
Total activities financed from appropriated funds	107,158,135	$69,100,921	$21,917,000
ACTIVITIES FINANCED FROM CORPORATE FUNDS			
Acquisition of Assets			
Navigation, flood control, and power program:			
Projects contributing to power supply:			
Boone	16,840		
Fort Patrick Henry	16,185		
Additional hydro unit—Fontana 3	338		
Johnsonville steam plant	11,965		
Widows Creek steam plant	7,111		
Kingston steam plant	216,430	28,000	5,000
Shawnee steam plant	192,912	14,000	
Colbert steam plant	2,137	1,000	
John Sevier steam plant	153,116	83,000	18,000
Gallatin steam plant	22,226	22,000	
Total projects contributing to power supply	639,260	148,060	23,000
Transmission system facilities	18,866,724	20,206,000	24,068,000
Additions and improvements at completed projects	72,426	875,000	193,000
Investigations for future projects	116,420	223,000	162,000
Distribution of administrative and general expenses	442,087	658,000	1,271,000
Total navigation, flood control, and power program	20,136,917	22,110,000	25,717,000
Fertilizer and munitions program:			
Chemical facilities		603,000	
Distribution of administrative and general expenses		15,000	
Total fertilizer and munitions program		618,000	
Total acquisition of assets	20,136,917	22,728,000	25,717,000
Expenses			
Navigation, flood control, and power program:			
Power operations	$105,470,753	$119,553,000	$127,841,000
Multipurpose reservoir operations	1,771,025	1,659,000	1,753,000
Distribution of administrative and general expenses	1,347,129	1,483,000	1,620,000
Total navigation, flood control, and power program	108,588,907	122,695,000	131,214,000
Fertilizer and munitions program:			
Fertilizer and munitions development	15,852,025	16,544,000	15,217,000
Distribution of administrative and general expenses	292,184	310,000	330,000
Total fertilizer and munitions program	16,144,209	16,854,000	15,547,000
Resource development program:			
Resource development	504,554	600,000	750,000
Distribution of administrative and general expenses	65,804	66,000	80,000
Total resource development program	570,358	666,000	830,000
General service activities:			
Reimbursable services	4,193,160	3,302,000	2,427,000
Distribution of administrative and general expenses	27,325	40,000	45,000
Total general service activities	4,220,485	3,342,000	2,472,000
Total expenses	129,523,959	143,557,000	150,063,000
Changes in Working Capital			
Inventories:			
Power inventories	2,337,851	7,833,000	1,769,000
Chemical inventories	−900,022	−340,000	3,000
Total changes in working capital	1,437,829	7,493,000	1,772,000
Total activities financed from corporate funds	151,098,705	173,778,000	177,552,000
Total obligations	258,256,840	242,878,921	199,469,000

Obligations by activities—Continued

Description	1955 actual	1956 estimate	1957 estimate
RECONCILIATION OF OBLIGATIONS TO ACCRUED EXPENDITURES			
Total obligations	$258,256,840	$242,878,921	$199,469,000
Add change in unliquidated obligations	98,769,677	19,706,000	810,000
Total accrued expenditures	357,026,517	262,584,921	200,279,000
Add—			
Changes in inventories derived from appropriated funds	30,086		
Transfers of property from other agencies	3,273		
Deduct changes in inventories derived from corporate funds	1,437,829	7,493,000	1,772,000
Total applied to programs (statement A)	355,622,047	255,091,921	198,507,000

SCHEDULE A–1. *Obligations by objects*

Object classification	1955 actual	1956 estimate	1957 estimate
Total number of permanent positions	13,651	12,715	11,687
Full-time equivalent of all other positions	9,035	5,233	2,507
Average number of all employees	21,117	17,182	13,778
Number of employees at end of year	19,854	14,905	13,818
Average salaries and grades:			
Grades established by the Board of Directors:			
Average salary	$4,981	$5,286	$5,369
Average grade	TVA–4.4	TVA–4.5	TVA–4.5
Ungraded positions: Average salary	$4,296	$4,456	$4,628
01 Personal services:			
Permanent positions	$57,402,037	$58,899,461	$56,560,307
Positions other than permanent	55,639,206	29,537,998	13,337,587
Regular pay above 52-week base	216,175	231,866	50,960
Payment above basic rates	4,460,527	4,684,001	4,827,146
Excess of annual leave earned over leave taken	885,745	38,674	
Total personal services	118,603,690	93,392,000	74,776,000
02 Travel	1,005,911	1,043,000	1,192,000
03 Transportation of things	16,440,472	22,321,000	21,799,000
04 Communication services	788,222	780,000	800,000
05 Rents and utility services	1,632,171	1,444,000	1,377,000
06 Printing and reproduction	44,038	81,000	84,000
07 Other contractual services	20,240,850	6,934,000	3,494,000
Services performed by other agencies	5,559,068	4,512,000	4,661,000
08 Supplies and materials	66,149,904	88,900,921	79,974,000
09 Equipment	25,463,174	22,665,000	9,998,000
10 Lands and structures	1,229,602	1,111,000	1,123,000
11 Grants, subsidies, and contributions	8,229,446	8,580,000	9,058,000
13 Refunds, awards, and indemnities	51,656	44,000	40,000
14 Interest	402,837	43,000	
15 Taxes and assessments	760,084	450,000	208,000
Subtotal	266,601,125	252,300,921	208,584,000
Deduct allocated working fund obligations	8,344,285	9,422,000	9,115,000
Total obligations	258,256,840	242,878,921	199,469,000

Mr. RABAUT. We will take up this morning the Tennessee Valley Authority.

We have Mr. Vogel, the Chairman of the Board of Directors, Mr. Curtis, Director; Mr. Wagner, the General Manager, and other representatives of TVA.

Do you have a general statement for the committee, Mr. Vogel?

Mr. VOGEL. I have, Mr. Chairman.

Mr. RABAUT. We will be pleased to hear from you at this time.

Mr. VOGEL. We are happy to be with you this morning. I have a brief opening statement.

General Statement

The budget program before you contemplates an appropriation for 1957 of $5,357,000. This compares with appropriations of $120 million for 1955 and $27,053,000 for 1956. The budget assumes rescission of $6,500,000 included in the 1956 appropriation for transmission connections with the Mississippi Valley Generating Co.

The new appropriation of $5,357,000, together with a balance of $16,560,000 estimated to be available from previous appropriations, and the application of $177,552,000 derived from corporate income would be used to finance estimated obligations totaling $199,469,000. The budget contemplates payments to the Treasury totaling $81,587,000, also derived from corporate income. Of this amount, $75 million is derived from power proceeds and represents payment on the power investment; the remaining $6,587,000 is derived from nonpower proceeds. Of the $199,469,000 in budgeted obligations, $41,672,000 would be applied to the acquisition of assets, $1,772,000 to operating inventories, and $156,025,000 to program expenses.

ACQUISITION OF ASSETS

Of the $41,672,000 budgeted for acquisition of assets, $15,955,000 would be derived from appropriated funds and $25,717,000 from corporate funds. The appropriation financed estimate includes $7,541,000 for starting construction of a new lock at Wilson Dam, estimated to cost $35 million. The new lock would replace obsolete facilities which now constitute a serious bottleneck and hazard to rapidly increasing river traffic. Tonnage through the existing Wilson locks rose from 452,000 in 1945 to 2,210,000 in 1955. Time required to break up tows for passage through 3 substandard lock chambers involving 3 separate lockages is excessive and is limiting navigation. Failure of operating mechanisms due to age, and of the river wall due to its condition, afford potential hazards.

The appropriation financed budget also includes $600,000 to begin a demonstration-scale fertilizer manufacturing unit to utilize leached-zone phosphate ores, a material now being discarded but from which a high analysis new type fertilizer can be produced.

The remaining appropriation budget for acquisition of assets provides for continuation or completion of work now underway. Normal additions to and replacements of transmission system facilities largely account for the $25,717,000 estimate financed from corporate funds.

PROGRAM EXPENSES

Of the $156,025,000 budgeted for program expenses, $150,063,000 would be derived from corporate sources, particularly income from power and fertilizer sales, and $5,962,000 would be derived from appropriated funds. The corporate financed expenses largely relate to operating costs for the power and chemical programs for which 1957 income is estimated at $231,550,000 and $20,646,000, respectively.

The estimate of $5,962,000 for appropriation financed expenses represents an increase of $529,000 over the 1956 budget. Of this increase, $245,000 would be used in the fertilizer program largely to bring more farms into our test demonstration work; $194,000 would

be used to improve multipurpose reservoir operations and the remaining $90,000 would be used to strengthen the flood-control program and to cover minor increases in estimates for other activities.

No appropriations are requested for the expansion of power facilities, it being hoped that Congress will be able to act during the current session upon legislation permitting the sale of revenue bonds for that purpose.

The 1957 budget program is more fully explained in the justification statement which has already been submitted to the committee and with the permission of the committee I would like to ask that it be made part of the record.

We have with us Dr. Curtis and several members of the TVA staff and we will be glad to answer any questions the committee may have.

SUMMARY OF JUSTIFICATION DATA

Mr. RABAUT. Thank you for your statement, Mr. Vogel.

We will insert in the record at this point pages 2, 3, 4, 5, and 7 of the justifications.

(The information referred to follows:)

TENNESSEE VALLEY AUTHORITY

Summary of regular appropriation financed budget (for fiscal years ending June 30, 1955, 1956, and 1957)

Page reference		1955 actual	1956 estimate	1957 estimate
	APPROPRIATION FINANCED OBLIGATIONS			
	ACQUISITION OF ASSETS			
	Navigation, flood control, and power program:			
11	Projects contributing to power supply:			
	Boone	$65,201		
	Fort Patrick Henry	187,041		
	Additional hydro units:			
	Hales Bar 15 and 16	−933		
	Hiwassee 2	1,298,639	$1,018,000	
	Cherokee 3 and 4	21,347		
	Chatuge 1	182,791	125,000	
	Nottely 1	1,015,474	1,014,000	
	Fontana 3	−28,537		
	Douglas 4	83,489		
	Johnsonville steam plant	380,590		
	Widows Creek steam plant	1,630,815	905,000	
	Kingston steam plant	23,538,003	13,125,000	$1,245,000
	Shawnee steam plant	16,986,244	9,658,000	1,206,000
	Colbert steam plant	12,376,050	7,019,000	95,000
	John Sevier steam plant	19,906,489	9,102,000	1,284,000
	Gallatin steam plant	16,421,013	16,976,000	1,909,000
	Total projects contributing to power supply	94,063,716	58,942,000	5,739,000
18	Transmission system facilities	3,176,520	1,260,000	
	Power service building	413,174	22,000	
20	Additions and improvements at completed projects	734,398	674,000	442,000
23	Navigation facilities	181,526	606,000	7,630,000
27	Flood-control facilities		49,000	300,000
28	Investigations for future projects:			
	Current	72,155	173,000	172,000
	Writeoff of Chilhowee project	−66,369		
	Distribution of administrative and general expenses	1,564,807	1,025,000	321,000
	Total navigation, flood control, and power program	100,139,927	62,751,000	14,604,000

Summary of regular appropriation financed budget (for fiscal years ending June 30, 1955, 1956, and 1957)—Continued

Page reference		1955 actual	1956 estimate	1957 estimate
	APPROPRIATION FINANCED OBLIGATIONS—Con.			
	ACQUISITION OF ASSETS—continued			
	Fertilizer and munitions program:			
30	Chemical facilities	$937,382	$556,000	$1,249,000
	Distribution of administrative and general expenses	28,981	27,000	40,000
	Total fertilizer and munitions program	966,363	583,000	1,289,000
	General service activities:			
37	General facilities	548,871	325,921	54,000
	Distribution of administrative and general expenses	3,755	8,000	8,000
	Total general service activities	552,626	333,921	62,000
	Total acquisition of assets, appropriation financed	101,658,916	63,667,921	15,955,000
	EXPENSES			
	Navigation, flood control, and power program:			
42	Navigation operations	263,216	246,000	253,000
46	Flood control operations	175,543	175,000	211,000
58	Multipurpose reservoir operations	2,170,690	2,066,000	2,260,000
	Distribution of administrative and general expenses	184,437	197,000	225,000
	Total navigation, flood control, and power program	2,793,886	2,684,000	2,949,000
	Fertilizer and munitions program:			
68	Fertilizer and munitions development	2,269,484	2,201,000	2,446,000
	Distribution of administrative and general expenses	87,069	100,000	110,000
	Total fertilizer and munitions program	2,356,553	2,301,000	2,556,000
	Resource development program:			
87	Resource development	336,370	400,000	400,000
	Distribution of administrative and general expenses	43,869	44,000	50,000
	Total resource development program	380,239	444,000	450,000
	General service activities: Maintenance of bridges financed by others on TVA dams	1,900	4,000	7,000
	Total expenses, appropriation financed	5,532,578	5,433,000	5,962,000
	CHANGES IN WORKING CAPITAL			
	Inventories and property transfers:			
125	General inventories	−30,086		
	Property transfers	−3,273		
	Total changes in working capital, appropriation financed	−33,359		
	Total regular appropriation financed budget	107,158,135	69,100,921	21,917,000
	SOURCES OF APPROPRIATED FUNDS			
	Appropriation	120,000,000	27,053,000	5,357,000
	Balance from prior year	52,266,056	65,107,921	16,560,000
	Balance carried forward to subsequent year	−65,107,921	−16,560,000	
	Unobligated balance (amount provided by Public Law 163 for transmission connections with Mississippi Valley Generating Co.):			
	Brought forward			6,500,000
	Carried forward		−6,500,000	
	Rescinded			−6,500,000
	Total appropriated funds	107,158,135	69,100,921	21,917,000

Summary of corporate financed budget (for fiscal years ending June 30, 1955, 1956, and 1957)

Page reference		1955 actual	1956 estimate	1957 estimate
	CORPORATE FINANCED OBLIGATIONS			
	ACQUISITION OF ASSETS			
	Navigation, flood control, and power program:			
11	Projects contributing to power supply:			
	Boone	$16,840	----------	----------
	Fort Patrick Henry	16,185	----------	----------
	Additional hydro unit, Fontana 3	338	----------	----------
	Johnsonville steam plant	11,965	----------	----------
	Widows Creek steam plant	7,111	----------	----------
	Kingston steam plant	216,430	$28,000	$5,000
	Shawnee steam plant	192,912	14,000	----------
	Colbert steam plant	2,137	1,000	----------
	John Sevier steam plant	153,116	83,000	18,000
	Gallatin steam plant	22,226	22,000	----------
	Total projects contributing to power supply	639,260	148,000	23,000
18	Transmission system facilities	18,866,724	20,206,000	24,068,000
20	Additions and improvements at completed projects	72,426	875,000	193,000
28	Investigations for future projects	116,420	223,000	162,000
	Distribution of administrative and general expenses	442,087	658,000	1,271,000
	Total navigation, flood control, and power program	20,136,917	22,110,000	25,717,000
	Fertilizer and munitions program:			
30	Chemical facilities	----------	603,000	----------
	Distribution of administrative and general expenses	----------	15,000	----------
	Total fertilizer and munitions program	----------	618,000	----------
	Total acquisition of assets, corporate financed	20,136,917	22,728,000	25,717,000
	EXPENSES			
	Navigation, flood control, and power program:			
53	Power operations	105,470,753	119,553,000	127,841,000
58	Multipurpose reservoir operations	1,771,025	1,659,000	1,753,000
	Distribution of administrative and general expenses	1,347,129	1,483,000	1,620,000
	Total navigation, flood control, and power program	108,588,907	122,695,000	131,214,000
	Fertilizer and munitions program:			
68	Fertilizer and munitions development	15,852,025	16,544,000	15,217,000
	Distribution of administrative and general expenses	292,184	310,000	330,000
	Total fertilizer and munitions program	16,144,209	16,854,000	15,547,000
	Resource development program:			
87	Resource development	504,554	600,000	750,000
	Distribution of administrative and general expenses	65,804	66,000	80,000
	Total resource development program	570,358	666,000	830,000
	General service activities:			
110	Reimbursable services	4,193,160	3,302,000	2,427,000
	Distribution of administrative and general expenses	27,325	40,000	45,000
	Total general service activities	4,220,485	3,342,000	2,472,000
	Total expenses, corporate financed	129,523,959	143,557,000	150,033,000

Summary of corporate financed budget (for fiscal years ending June 30, 1955, 1956, and 1957)—Continued

Page reference		1955 actual	1956 estimate	1957 estimate
	CORPORATE FINANCED OBLIGATIONS—Con.			
	CHANGES IN WORKING CAPITAL			
125	Inventories:			
	Power inventories	$2,337,851	$7,833,000	$1,769,000
	Chemical inventories	−900,022	−340,000	3,000
	Total changes in working capital, corporate financed	1,437,829	7,493,000	1,772,000
	Total corporate financed obligations	151,098,705	173,778,000	177,552,000
	PAYMENTS			
127	Payments to U. S. Treasury:			
	Retirement of bonds	15,000,000	14,000,000	
	Payment on appropriation investment in the power program	35,000,000	45,000,000	75,000,000
	Payment of miscellaneous nonpower proceeds	5,465,224	7,263,895	6,587,000
	Total payments to U. S. Treasury	55,465,224	66,263,895	81,587,000
	Total corporate financed budget	206,563,929	240,041,895	259,139,000
	SOURCES OF CORPORATE FUNDS			
	CURRENT INCOME			
	Navigation, flood control, and power program:			
	Navigation operations	22,469	30,000	33,000
	Power operations	185,880,345	219,931,000	231,550,000
	Multipurpose reservoir operations	314,458	270,000	234,000
	Total program	186,217,272	220,231,000	231,817,000
	Fertilizer and munitions program: Fertilizer and munitions development	20,458,840	21,991,000	20,646,000
	Resource development program: Resource development	5,404	9,000	16,000
	General service activities: Reimbursable services	4,220,485	3,342,000	2,472,000
	Miscellaneous: Sale of retired plant and other miscellaneous receipts	3,623,824	2,654,000	2,307,000
	Total current income	214,525,825	248,227,000	257,258,000
	DECREASES IN RESERVE			
	Power proceeds:			
	Balance from prior year	36,755,746	42,918,971	51,780,971
	Balance carried forward to subsequent year	−42,918,971	−51,780,971	−49,998,971
	Total decrease in power proceeds	−6,163,225	−8,862,000	1,782,000
	Nonpower proceeds:			
	Balance from prior year	5,465,224	7,263,895	6,587,000
	Balance carried forward to subsequent year	−7,263,895	−6,587,000	−6,488,000
	Total decrease in nonpower proceeds	−1,798,671	676,895	99,000
	Total decreases in reserves	−7,961,896	−8,185,105	1,881,000
	Total current income and decreases in reserves	206,563,929	240,041,895	259,139,000

Data on selected major projects

	Fiscal year construction started	Nameplate capacity and service dates		Direct obligations				Administrative and general expenses total project	Estimated incidental income fiscal year 1956–57	Estimated total cost
		Capacity kilowatts	Service dates	Actual to June 30, 1955	Estimated					
					Fiscal year 1956	Fiscal year 1957	To complete			
REGULAR APPROPRIATION										
FINANCED BUDGET										
Projects contributing to power supply:										
Boone, 3 units	1951	75,000	March, June, September 1953.	$26,742,057				$449,517		$27,191,574
Fort Patrick Henry, 2 units	1951	36,000	December 1953, February 1954.	12,180,213				239,629		12,419,842
Additional hydro units:										
Hales Bar 15 and 16	1950	48,600	July, December 1952	14,028,898				268,692		14,297,590
Hiwassee 2	1953	59,500	February 1956	5,484,086	$1,018,000			83,914	−$60,000	6,526,000
Cherokee 3 and 4	1951	60,000	January, October 1953	5,440,382				69,564		5,509,946
Chatuge 1	1953	10,000	December 1954	2,158,527	125,000			31,473		2,315,000
Nottely 1	1953	15,000	January 1956	2,180,378	1,014,000			45,622	−37,000	3,203,000
Fontana 3	1951	67,500	February 1954	4,206,897				53,318		4,260,215
Douglas 4	1952	26,000	August 1954	2,907,144				39,808		2,946,952
Johnsonville steam plant, 6 units.	1949	675,000	October, November 1951; February, April, November 1952; February 1953.	93,205,458				1,078,761		94,284,219
Widows Creek steam plant, 6 units.	1950	675,000	July, October, November 1952; January 1953; June, July 1954.	91,478,085	905,000			657,915	−74,000	92,967,000
Kingston steam plant, 9 units.	1951	1,440,000	February, April, June, July 1954; January, March, May, August, December 1955.	183,903,430	13,125,000	$1,245,000	$527,000	1,248,570	−549,000	199,500,000
Shawnee steam plant, 10 units.	1951	1,350,000	April, June, October 1953; January, October, November, December 1954; March, July 1955; June 1956.	204,359,732	9,658,000	1,206,000	328,000	1,358,268	−910,000	216,000,000
Colbert steam plant, 4 units.	1952	720,000	January, March, July, November 1955.	96,683,716	7,019,000	95,000	104,000	662,284	−64,000	104,500,000
John Sevier steam plant, 3 units.	1953	540,000	July, September 1955; March 1956.	76,699,804	9,102,000	1,284,000	560,000	615,196	−761,000	87,500,000

Gallatin steam plant, 2 units.	1953	450,000	May, June 1956	61,630,354	16,976,000	1,909,000	513,000	664,646	−193,000	81,500,000
Total projects contributing to power supply, regular appropriation financed budget				883,289,161	58,942,000	5,739,000	2,032,000	7,567,177	−2,648,000	954,921,338
Navigation facilities: New lock at Wilson Dam, Ala.	1957		August 1959	141,417	379,000	7,541,000	26,388,583	550,000		35,000,000
SUPPLEMENTAL BUDGET										
Projects contributing to power supply:										
Johnsonville steam units 7 and 8.	1956	270,000	September, November 1958			8,000,000	35,350,000	650,000		44,000,000
John Sevier steam unit 4	1956	180,000	November 1957		3,500,000	19,500,000	4,600,000	400,000		28,000,000
Total projects contributing to power supply, supplemental budget					3,500,000	27,500,000	39,950,000	1,050,000		72,000,000

Mr. RABAUT. I understand that for fiscal year 1957 you propose a budget of $21,917,000. By the utilization of $16,560,000 carried forward from 1956 you will need in new money $5,357,000. Is that correct?

Mr. VOGEL. That is correct, sir.

REPAYMENTS TO THE UNITED STATES TREASURY

Mr. RABAUT. Your summary of corporate financed budget reflects payments of $81,587,000 to the United States Treasury. Let us insert in the record at this point pages 126 through 131 of the justifications.

(The information referred to follows:)

TENNESSEE VALLEY AUTHORITY

SCHEDULE C–1.—*Payments to U. S. Treasury from power income under provisions of the Government Corporations Appropriation Act, 1948*

Fiscal year	Minimum payments required under 1948 law		1/40 of plant investment at end of previous year		Actual and budgeted payments [1]	
	Year	Total period	Year	Total period	Year	Total period
1948	$10,500,000	$10,500,000			$10,500,000	$10,500,000
1949	2,500,000	13,000,000	$8,705,981	$8,705,981	5,500,000	16,000,000
1950	2,500,000	15,500,000	8,705,981	17,411,962	5,500,000	21,500,000
1951	2,500,000	18,000,000	9,149,627	26,561,589	9,000,000	30,500,000
1952	2,500,000	20,500,000	9,733,970	36,295,559	12,000,000	42,500,000
1953	2,500,000	23,000,000	12,256,316	48,551,875	15,000,000	57,500,000
1954	2,500,000	25,500,000	17,482,476	66,034,351	20,000,000	77,500,000
1955	2,500,000	28,000,000	21,592,868	87,627,219	50,000,000	127,500,000
1956	2,500,000	30,500,000	27,952,029	115,579,248	[2] 59,000,000	[2] 186,500,000
1957	2,500,000	33,000,000	35,327,400	150,906,648	[3] 75,000,000	[3] 261,500,000
1958	54,059,810	87,059,810				
1968		174,119,620				
1978		261,179,430				
1988		348,239,240				
1990		365,985,080				
1991		389,358,811				
1992		490,252,655				
1993		699,299,057				
1994		863,714,733				
1995		1,118,081,158				
1996		[2] 1,413,096,000				
1997		[2] 1,444,898,000				
1998		[2] 1,445,400,000				

[1] In addition to payments under the provisions of the Government Corporations Appropriation Act, 1948, bond redemptions of $8,572,500 and other payments of $15,059,019 were made prior to fiscal year 1948.

[2] Estimated.

[3] Estimated payment budgeted for 1957 assumes that funds required for new generating units would be provided from sale of revenue bonds; otherwise payment would be estimated at $40 million.

PAYMENTS TO THE UNITED STATES TREASURY

Payments to the United States Treasury for 1957 are estimated at $81,587,000. Of this total, $75 million would be from power income and $6,587,000 from nonpower sources. This will bring the total payments in cash from TVA to the United States Treasury general fund to $326,486,785, of which $285,131,519 is from power income. Actual and budgeted payments from power income through 1957 total $110,593,352 more than if equal installments were paid over a 40-year period.

PAYMENTS FROM POWER INCOME ($75 MILLION)

Payments to the United States Treasury in 1957 from power income are estimated at $75 million on the assumption that the funds required for new generating units would be provided from sale of revenue bonds. Should power revenues be used for such purposes, payments to the Treasury would be smaller, possibly no more than $40 million. The estimates indicate that in either event the payment can be in excess of any requirement under the Government Corporations

Appropriation Act, 1948, which provides for payments to the Treasury which will equal the appropriations invested in TVA power facilities.

The 1948 act states that payments of not less than $2,500,000 of the TVA bonded indebtedness outstanding on July 1, 1948, shall be made annually; that total payments (including principal payments on bonds) shall be not less than $87,059,810 by June 30, 1958; and that an equal amount be paid during each succeeding 10-year period until a total of $348,239,240 has been paid. In addition, amounts equal to new appropriations invested in power facilities must be paid within 40 years after the year in which the facilities go into operation. The first additional amount, $17, 745,840, is payable by 1990. This and successive amounts payable for new facilities, including those provided for in TVA's budget program for 1957, are reflected in schedule C–1, page 126.

TVA's rate of return on its investment in power facilities is more than sufficient to meet the payments required. Because power facilities have been financed from revenues as well as from appropriations, the average payments required over the years could be met with an annual rate of return of less than 2½ percent on the total net investment. During the period 1933–55, TVA's power operations have provided an average annual return on power investment of about 4 percent. There are variations in the rate of return from year to year. Favorable streamflows and markets for supplemental power resulted in returns of 5.8 percent, 5.4 percent, and 4.7 percent for 1950, 1951, and 1952, respectively. In 1953 and 1954 adverse water conditions resulted in considerably lower rates of return of 2.7 percent and 3.2 percent, respectively. In 1955 it was 4.2 percent. It is estimated to be about 4 percent in 1956 and about 3¾ percent in 1957 if average streamflow conditions prevail.

As provided in section 26 of the TVA Act, power revenues are used to finance the expenses of power operations and the construction of certain power facilities and to provide working capital. The amount to be paid to the Treasury in any one year must be related to these requirements, which vary substantially from year to year depending on the demand for power; the volume of construction work required to meet this demand; and, most important, variations of streamflow from the average conditions assumed for budget estimates. If low streamflows should occur during the remaining months of 1956 and in a substantial portion of 1957, the net of funds available from power operations could fall below estimates by as much as $25 million, due both to a reduction in revenues and to increased production expenses. The need for flexibility in scheduling payments was recognized both in section 26 of the TVA Act and in the payment provisions of the 1948 Appropriation Act. In view of the wide fluctuations in the requirements for power revenues to meet operating expenses, finance capital additions, and provide working capital, year-to-year payment plans must be reviewed from time to time as the situation unfolds.

In order to assess TVA's performance in payments actually made through June 30, 1955, and those budgeted for fiscal years 1956 and 1957, these figures are compared on the foregoing schedule C–1 with (1) minimum payments required under the 1948 law, and (2) payments that would be made under a hypothetical schedule which assumes that each increment of investment would be paid in equal installments of one-fortieth each, beginning with the year immediately following completion of construction. As seen from schedule C–1, payments under the 1948 law made and budgeted through June 30, 1957, are considerably more than those which would have been made on the basis of paying each year one-fortieth of the plant investment at the end of the previous year.

Source and disposition of power income

	1955 actual	1956 estimate	1957 estimate
Income for year:			
Power operations	$185,880,345	$219,931,000	$231,550,000
Other income	119,295	−49,000	−79,000
Total income for year	185,999,640	219,882,000	231,471,000
Program requirements:			
Expense of power operations	106,713,902	120,928,000	129,341,000
Acquisition of assets	19,496,531	21,962,000	25,694,000
Power portion of expense of multipurpose reservoir operations	1,560,547	1,497,000	1,639,000
Changes in power inventories (net)	2,065,435	7,633,000	1,579,000
Total program requirements	129,836,415	152,020,000	158,253,000
Balance, current year	56,163,225	67,862,000	73,218,000
Balance, previous year	36,755,746	42,918,971	51,780,971
Total available for contingencies and payments to U. S. Treasury	92,918,971	110,780,971	124,998,971
Payments to U. S. Treasury:			
Retirement of bonds	15,000,000	14,000,000	
Other	35,000,000	45,000,000	75,000,000
Total payments to U. S. Treasury	50,000,000	59,000,000	75,000,000
Balance reserved for contingencies	42,918,971	51,780,971	49,998,971
Cumulative payments to U. S. Treasury:			
Retirement of bonds	51,072,500	65,072,500	65,072,500
Other	100,059,019	145,059,019	220,059,019
Total cumulative payments to U. S. Treasury	151,131,519	210,131,519	285,131,519

PAYMENTS FROM NONPOWER PROCEEDS ($6,587,000)

The balance of nonpower proceeds at the end of each fiscal year not required for the purposes enumerated in section 26 of the TVA Act are paid into the Treasury prior to the end of the following calendar year. The 1957 budget is based on payment during fiscal year 1957 of $6,587,000, which is the estimated balance of nonpower proceeds at June 30, 1956. Payments from nonpower proceeds during 1955 were $5,465,224 and are estimated at $7,263,895 in 1956; the total of such payments through June 30, 1957, is estimated to be $41,355,266.

Source and disposition of nonpower proceeds

	1955 actual	1956 estimate	1957 estimate
Income for year:			
Sales of fertilizer and byproducts	$20,280,386	$21,748,000	$20,239,000
Sale of retired plant	2,468,235	2,341,000	2,155,000
Other income	183,627	60,000	69,000
Total income for year	22,932,248	24,149,000	22,463,000
Program requirements:			
Cost of experimental fertilizer production	15,971,168	16,621,000	15,145,000
Acquisition of assets		618,000	
Resource development	570,358	666,000	830,000
Change in chemical inventories	−903,532	−343,000	
Bridge construction, H. R. 3182	30,359		
Total program requirements	15,668,353	17,562,000	15,975,000
Balance, current year	7,263,895	6,587,000	6,488,000
Balance, previous year	5,465,224	7,263,895	6,587,000
Total available for contingencies and payments to U. S. Treasury	12,729,119	13,850,895	13,075,000
Payments to U. S. Treasury	5,465,224	7,263,895	6,587,000
Balance reserved for contingencies	7,263,895	6,587,000	6,488,000
Cumulative payments to U. S. Treasury	27,504,371	34,768,266	41,355,266

Mr. RABAUT. Will not a payment of this size result in a reduction in your reserve?

Mr. VOGEL. Not materially, sir, no.

Mr. RABAUT. You might enlarge on that a little bit.

Mr. VOGEL. The actual reserve in 1955 was $42,918,971; estimated in 1956 it is $51,780,971; and in 1957 it is estimated at $49,998,971, so there is a slight reduction between 1957 and 1956, but it is in the same general range. That is on page 130, sir.

Mr. RABAUT. You might tell me, then, after making this payment, what will be your balance?

Mr. VOGEL. That is our balance, reserve for contingencies, $49,998,971.

Mr. RABAUT. That is in line with your balances which you kept before?

Mr. VOGEL. Yes, sir.

Mr. RABAUT. Your large payment to the United States Treasury is based on the assumption that the funds required for the new generating units would be provided from the sale of revenue bonds. In the event you do not receive such authority, I assume your payment will be limited to what is required by law. Is that correct?

Mr. VOGEL. It will be limited to what is required by law and decided by the Congress.

Mr. RABAUT. In the event you do not receive such authority, in other words, if Congress does not act.

Mr. VOGEL. Congress would have an option of a number of ways in which to move. If Congress did not appropriate any money for that purpose, the need obviously would have to be met out of power revenues, as might be approved by the Congress.

Mr. RABAUT. Your payment of $75 million to the United States Treasury will be $30 million more than you envisioned it would be this time last year, and your payment of $6,587,000 from nonpower proceeds will be $395,000 less than you estimated last year. Is that correct?

Mr. VOGEL. Yes, sir.

FUNDS FOR NEW GENERATING UNITS

Mr. RABAUT. Funds for a fourth generating unit at John Sevier are contingent upon an appropriation and authority to issue bonds or upon use of your power revenues. If you do not receive authority for self-financing and do not receive a supplemental appropriation to begin construction, you are in a position where you must use revenues or soon be faced with a power shortage. Is that correct?

Mr. VOGEL. With funds available from no other source there would result a possible power shortage if revenues were not so used.

ACQUISITION OF ASSETS

Mr. RABAUT. At this point let us take up the title "Acquisition of Assets," and insert in the record, pages 11 through 41 of the justifications.

(The information referred to follows:)

Acquisition of Assets

Fund requirements in 1957 for acquisition of assets total $41,672,000; $15,955,000 will be derived from previous appropriations and $25,717,000 from corporate funds.

PROJECTS CONTRIBUTING TO POWER SUPPLY

Projects under construction

Appropriated funds in the amount of $5,739,000 are required in fiscal year 1957 for continuing the construction of generating units previously authorized by Congress. All of these generating units are expected to be in operation by the end of fiscal year 1956; however, many finishing details will remain for completion.

The generating units now under construction were planned to provide for system power requirements through calendar year 1956 with a modest reserve for unforeseen developments. No funds were requested in the budget programs presented to Congress for fiscal years 1955 and 1956 to begin construction of additional capacity in anticipation of load growth beyond 1956. Those budget programs contemplated that the Atomic Energy Commission would be able to contract with another supplier for 600,000 kilowatts beginning in 1957 to replace some of the power AEC is now under contract to purchase from TVA. AEC planned to have that power delivered to the TVA system at Memphis. Now those plans have been canceled inasmuch as the city of Memphis has decided not to seek to renew its contract to purchase power from TVA, when that contract expires June 1, 1958, and is proceeding to build its own power-generating facilities. With the completion of capacity additions now under construction, the relationship between system capacity and presently predictable requirements would be approximately as shown in the following table.

This table shows the relationship between capacity now under construction and estimated demands at the end of calendar years 1957 (including Memphis) and 1958 (excluding Memphis):

	System capacity, kilowatts		Presently estimated demands, kilowatts	Deficiency	
	Nameplate rating	Assured load-carrying ability		Kilowatts	Percent of load
1957	10,026,485	9,523,000	9,650,000	−127,000	−1.3.
1958	10,050,485	9,543,000	9,800,000 to 10,000,000	−257,000 to −457,000	−2.6 to −4.6.

The system capacity figures used above include anticipated installations at Army dams on the Cumberland River and at aluminum company dams on the Little Tennessee River. These units have a combined nameplate rating of 186,000 kilowatts.

The power requirements in 1957 and 1958 could be greater if AEC should want to continue to operate at current production levels which require 400,000 kilowatts more power than is available under its long-term contracts with TVA. AEC has been purchasing its additional requirements under short-term contracts. Furthermore in 1958, TVA would be called upon to provide power to the extent that installation of Memphis' new generating capacity could not be completed in time to fulfill its requirements; however, it may be possible to obtain some power from other systems to assist in meeting such temporary requirements.

Additional units at existing projects

As the foregoing table indicates, on the basis of the capacity now under construction and estimated loads, a power shortage is in prospect before the end of 1957. The new capacity included in the 1957 budget program is designed to bring the 1957 and 1958 power supply up to the estimated demands. To accomplish that the following generating units are proposed for installation in two existing steam plants:

Unit	*Nameplate rating (kilowatts)*
John Sevier unit 4	180,000
Johnsonville units 7 and 8	270,000

The John Sevier unit can be placed in operation before the end of 1957; no other additional units can be completed on the TVA system before the time of the 1957 peak demand. Therefore the relationship at the end of 1957 between system capacity and estimated demands would be as follows:

	System capacity, kilowatts		Presently estimated demands, kilowatts	Margin	
	Nameplate rating	Assured load-carrying ability		Kilowatts	Percent of load
End of 1957	10,206,485	9,713,000	9,650,000	63,000	0.7

On the basis of presently estimated demands the relationship at the end of 1958 between demand and capacity, including the John Sevier unit and the Johnsonville units, is shown in the following table:

	System capacity, kilowatts		Presently estimated demands, kilowatts	Margin	
	Nameplate rating	Assured load-carrying ability		Kilowatts	Percent of load
End of 1958	10,500,485	10,013,000	9,800,000 to 10,000,000	213,000 to 13,000	2.2 to 0.1

Financing of these additional units at existing projects

Since immediate steps are required to insure timely completion of the necessary new capacity, a supplemental appropriation of $3,500,000 is being requested to provide funds in fiscal year 1956 for construction of John Sevier unit 4. It is proposed that the remaining funds required in 1957 and subsequent years ($68,500,000, as shown in the table below) to finance the additional units included in the 1957 budget program be provided without the use of further appropriations. Requests have been submitted to Congress for legislation to permit issuance of revenue bonds to supplement revenues to provide funds to finance generating capacity. Legislative action has not yet been completed, however.

The estimated costs of the units proposed to be installed at existing projects and the expected expenditures by years are given in the table which follows:

	John Sevier unit 4	Johnsonville units 7–8
Fiscal year 1956	$3,500,000	
Fiscal year 1957	19,500,000	$8,000,000
Fiscal year 1958	4,600,000	28,000,000
After 1958		7,350,000
Administrative and general expenses	400,000	650,000
Estimated total cost	28,000,000	44,000,000

BASIS FOR ESTIMATES OF LOAD AND CAPACITY

Estimates of power requirements

The estimates of power requirements assume a continued expansion of the economy of the Nation and the region with a relatively high level of industrial production.

Large and constantly growing amounts of power are used by the 148 municipal and cooperative electric systems which distribute TVA power to the 5 million people in the area they serve. Forecasts of their power requirements are based on a number of independent studies of factors which affect power use. These include studies of the appliances used and their effect on consumption levels. The trends of growth and seasonal variations are projected from past experience.

Existing and prospective requirements of commercial and industrial establishments served by the municipalities and cooperatives are reviewed.

A second group of loads is the few large industrial loads served directly by TVA. Their requirements are forecast on the basis of information received directly from the consumers, for example, in connection with contract revisions and inquiries concerning proposed developments.

The third group consists of the loads of the atomic energy plants and other Federal agencies operating in the area. The load figures include for Federal agencies only the amounts under contract, except for a scheduled increase at Oak Ridge, and not the additional power AEC has been finding it desirable to use under short-term arrangements. Consequently, the estimated power requirements of AEC for 1958 are below current requirements by several hundred thousand kilowatts.

Estimates of load-carrying ability

Hydro and steam generating units are designed and manufactured to deliver their nameplate capacity under specified average operating conditions. Under favorable conditions the output can be increased above this designed capacity. The dependable capacity of the hydroplants is determined by taking unfavorable conditions into account also. For example, high tailwater conditions resulting from floods may reduce available hydro capacity by more than 500,000 kilowatts during winter periods when heavy system demands for the year are being supplied. Drawdown of storage reservoirs as a result of drought conditions such as have been experienced during recent years can reduce the output from the hydro system 500,000 kilowatts below its rated capacity. The figure assumed by TVA to be the dependable capacity at time of system peak demand does not reflect a compounding of these effects, but has been reduced below the rated capacity only about as much as the effect of three-fourths of one or the other of these two possible unfavorable conditions just mentioned. For the steam plants the full maximum capability is included. Operating reserves must be deducted from the assumed dependable capacity to cover the probable combination of the effects of removal of units from service for scheduled or emergency maintenace; failure of units to perform as expected; capacity required under instantaneous load changes to maintain system stability, regulate frequency, and control loading on tielines; and the effects of abnormal temperature or other weather conditions. The assured load-carrying ability of the system, computed by deducting the necessary allowance for operating reserves, is the amount of load which can be supplied with reasonably reliable service under the circumstances that must be expected. As the system grows, TVA's allowance for operating reserves, as a percentage of the total dependable capacity, is gradually being reduced to about 8 percent—a lower percentage than that generally prevailing in the industry.

The comparison of the projections of load and of load-carrying ability shows the extent to which a margin is provided or a deficiency can be expected. The seriousness of any indicated deficiencies or the desirability of any margin should be appraised in light of the changes that develop in capacity installation schedules and in power requirements and the relative seriousness of a power surplus or a power shortage. Estimates made several years in advance are, of course, subject to a margin of error, since they involve judgments on undertain future events. Past estimating experience indicates that facilities are often delayed by such factors as inability to obtain equipment on schedule. The estimates of load could prove to be either too high or too low, and if presently unexpected loads develop, as is not unlikely, they will prove too low. If these factors should result in changing small margins into deficiencies, the result would be curtailment of service and revenues and the need to use high-cost purchased power. These expensive expedients could extend over a period of years depending upon how quickly the deficiency could be eliminated by additional construction. Either or both of these results of power deficiencies are likely to be far more serious and costly than having a margin of reserve which is temporarily above minimum requirements.

Past experience on the TVA system shows that an adequate margin of power supply may save in 1 year, by providing more economical sources of power, as much as 20 or 25 percent of the entire capital costs of the apparent surplus capacity. On the other hand, placing a generating unit in service a few months in advance of the time it is needed will result in added costs which are insignificant in comparison to the potential savings which would be effected if unforeseen power requirements develop.

Load and capacity forecasts provide the basis for judgment as to the desirable pace of new construction, and past experience, combined with an analysis of cur-

rent trends and conditions, must furnish the basis for the forecasts. The load and capacity figures presented herein represent the best estimates of the TVA management, all factors considered.

TRANSMISSION SYSTEM FACILITIES

Transmission line and substation construction during fiscal year 1957 will provide facilities needed for supplying general load growth throughout the area. The construction during fiscal year 1957 is estimated to be at about the same level as in 1955 and 1956.

This table shows obligations for transmission system facilities:

	Obligations		
	1955 actual	1956 estimate	1957 estimate
Appropriated funds:			
Direct: Primary transmission facilities	$2,536,041	$1,119,000	
Engineering and design and general expense	640,479	141,000	
Total appropriated funds	3,176,520	1,260,000	
Corporate funds:			
Direct:			
Primary transmission facilities	10,316,977	6,862,000	$9,036,000
Subtransmission facilities	3,604,136	4,683,000	6,924,000
Minor additions, improvements, and replacements	3,406,592	6,330,000	5,607,000
Total direct	17,327,705	17,875,000	21,567,000
Engineering and design and general expense	1,539,019	2,331,000	2,501,000
Total corporate funds	18,866,724	20,206,000	24,068,000
Total transmission and other power facilities	22,043,244	21,466,000	24,068,000

Appropriated funds were provided in fiscal year 1956 to start construction of two new primary transmission projects for which additional funds were to be requested in fiscal year 1957. Termination of the arrangements between AEC and the Mississippi Valley Generating Co. has made unnecessary the starting of construction of the Mississippi River crossing and related facilities for which $6,500,000 was made available. The revised schedule for full power requirements of the Arnold Engineering Development Center's wind tunnel and related test facilities permits a year's postponement of the construction of the heavy transmission connection from Murfreesboro, Tenn., to AEDC for which $920,000 was made available for beginning construction during fiscal year 1956. All construction of transmission facilities planned for fiscal year 1957 is to be financed from corporate funds. Accordingly, beginning construction of this line with corporate funds is scheduld for fiscal year 1957.

Primary transmission facilities estimates for fiscal year 1957 total $9,036,000, of which $1,861,000 represents expenditures for continuation of work started in fiscal year 1956 or earlier years. The remainder, $7,175,000, is required for projects to be started in fiscal year 1957. These facilities, most of which will operate at 154,000 volts, are required for transmitting large quantities of power from generating plants to (1) the 66,000-volt and 44,000-volt subtransmission system which in turn supplies principally the loads of the municipalities and cooperatives; and (2) those directly served customers, including Federal agencies, which purchase substantial amounts of power. The primary transmission system is also used for power transfers to and from neighboring utilities in connection with interchange and other transactions. The estimate for 1957 includes beginning construction of connections to the Cheatham hydro plant, an additional double-circuit 154-kilovolt connection to the John Sevier steam plant, and the 154-kilovolt line from Murfreesboro, Tenn., to AEDC.

Direct construction expenditures of $6,924,000 will be required in fiscal year 1957 to increase the capacity of subtransmission facilities. Of this amount, $776,000 is for continuing work started in fiscal year 1956 or earlier years. The remainder, $6,148,000, covers line and substation additions (to be started in 1957) throughout the power-service area where loads have outgrown existing facilities. Of this amount, $3,525,000 is for new 66-kilovolt and 44-kilovolt lines and substations to provide new service points to contractors in areas now served by

inadequate 13-kilovolt distribution lines, and $2,623,000 is to provide capacity increases at existing 66-kilovolt and 44-kilovolt substations.

Expenditures of $5,607,000 will be required for other additions and replacements of electric facilities. Of this amount, $1,333,000 covers replacement of line and substation facilities; $802,000 provides for installation of static capacitors and low-voltage switches; $889,000 is for additions and improvements to communication facilities; $1,307,000 is for a large number of minor additions, improvements, and replacements at generating plants; and $1,276,000 is for shop, laboratory, and warehouse facilities.

Additions and improvements at completed projects

This table shows obligations for additions and improvements at completed projects:

	1955 actual	1956 estimate	1957 estimate
Appropriated funds (multipurpose projects):			
1. Construction cleanup work on completed projects	$51,336	$180,000	$84,000
2. Site improvements and public-use facilities	129,199	390,000	282,000
3. Construction for malaria control	217,482	37,000	
4. Access roads to cabin sites scheduled for sale	44,761	41,000	51,000
5. Rehabilitation of operating mechanisms for spillway gates at Wilson Dam	234,368		
6. Miscellaneous plant and equipment	57,252	26,000	25,000
Total appropriated funds	734,398	674,000	442,000
Corporate funds (single-purpose projects):			
7. Construction cleanup work on completed projects	72,426	875,000	193,000

1. Construction cleanup work on completed projects—$84,000

The 1957 estimate of $84,000 for construction cleanup work covers final land surveys, land records, allowances for court awards for land acquisition cases in process of condemnation, and preparation of record drawings and reports recording data on projects as built. About $10,000 of the 1957 estimate relates to work on final record drawings showing features of projects as built and final technical reports for engineering reference and maintenance purposes; $58,000 is required for permanent land marking and land record plats. Allowances for court awards in condemnation cases and technical and legal services required in connection with uncompleted land acquisition cases are estimated at $16,000.

2. Site improvements and public-use facilities—$282,000

TVA projects are open to the public and are points of interest for a great number of visitors. For example, during fiscal year 1955 there were over 7 million visitors to TVA dams. There were more than 1,200,000 visitors at Kentucky Dam; 982,000 at Fontana; 945,000 at Norris; 821,000 at Chickamauga; and numbers ranging from 583,000 to 61,000 at other projects. Such large assemblies of people require parking space, proper sanitation facilities, and other service installations. TVA provides only minimum facilities necessary to meet reasonable standards of public safety and convenience. During World War II, public service facilities planned for dam reservations were deferred to conserve materials and manpower. This caused no problem at the time because access to TVA facilities was restricted. It did, however, leave a backlog of uncompleted items which became necessary when those facilities could again be made available to the public. Proper facilities for control of public use of dam reservations are necessary to keep grounds maintenance costs within reasonable bounds.

Completion of this work has been planned so that all essential major items of this nature now foreseen will be finished by 1960. This will require from $200,000 to $300,000 a year until that time.

The 1957 estimate of $282,000 includes $48,000 for a property maintenance building at Kentucky Dam to replace an old construction building now being used; $15,000 for resurfacing the access road at Hales Bar Dam; $15,000 for resurfacing the access road at Hiwassee Dam; $140,000 for roads, parking areas, lighting, public toilets, and planting at Chickamauga Dam, which have been planned for several years but have been deferred until completion of the highway bridge across the dam; $16,000 for public toilet facilities to replace pit privies at the west side public-use area at Kentucky Dam; $19,000 for design work on future site improvements; and $29,000 for miscellaneous improvements at 17 dams, such as directional signs, fencing, and the like.

3. Construction for malaria control

No funds are requested for this activity for 1957.

4. Access roads to cabin sites scheduled for sale—$51,000

The 1957 estimate includes $51,000 for constructing about 6½ miles of low-cost access roads to cabin-site areas on 3 reservoirs. Construction of these roads will permit sale of surplus properties in isolated areas at prices sufficiently enhanced to exceed the cost of building the roads.

5. Rehabilitation of operating mechanisms for spillway gates at Wilson Dam

This work was completed in 1955. No funds are required in 1957.

6. Miscellaneous plant and equipment—$25,000

The 1957 estimate of $25,000 covers a number of miscellaneous additions and retirements at completed projects, such as boats, motors, and other portable malaria-control equipment; and mowers, rakes, and small tools for maintenance of dam reservations.

7. Construction cleanup work on completed projects—$193,000

The 1957 estimate of $193,000 from corporate funds (power proceeds) covers cleanup of design work, minor construction costs, and final technical reports on recently installed hydro-generating units and steam plants; work on land records for single-purpose power projects; purchase of reservation maintenance tools for single-purpose power projects; and minor additions and retirements at various powerhouses.

NAVIGATION FACILITIES

Plans for proposed navigation facilities have been developed in cooperation with representatives of the Corps of Engineers, Department of the Army. The 1957 estimate is $7,630,000.

This table shows estimated obligations for 1957 for navigation facilities:

1. Construction of a new navigation lock, Wilson Dam	$7, 541, 000
2. Other navigation facilities:	
Foundations for storage of emergency needle dams (6 locks)	15, 000
Additions to the Harriman coal terminal	52, 000
Preliminary planning for future improvements at existing locks and completion of record drawings for completed improvements	22, 000
Total	7, 630, 000

1. Construction of a new navigation lock, Wilson Dam—$7,541,000

The TVA system of dams on the main stem of the Tennessee River has created a navigation channel from Paducah, Ky., near the mouth of the Tennessee, to Knoxville, Tenn., some 650 miles upstream; $158,142,000 has been invested to make the river navigable. At the center of this navigation system is a serious bottleneck, the old lock system at Muscle Shoals. An additional investment estimated at $35 million to improve lockage facilities at this point will greatly increase the benefits of the investment in the whole system.

At present, three lockages—through a tandem double-lift lock at Wilson Dam and a single-lift lock at lock and dam No. 1, about 2.6 miles downstream from Wilson Dam—are necessary to pass traffic between Pickwick and Wilson Reservoirs. These old locks were designed about 35 years ago to meet the needs of navigation as visualized at that time. The controlling lock size is 60 by 292 feet. Barges 300 feet long are in use on other rivers but can reach no more than one important Tennessee River port because of the restriction at Muscle Shoals. The filling and emptying mechanisms and channel approaches are also obsolete. Due to the age of the operating mechanisms, failures could occur which would put the locks out of service and result in serious interruptions in traffic. The concrete in the river wall is badly cracked and this condition affords a potential hazard to navigation.

The existing tandem lock arrangements at Wilson Dam doubles the operating time that would be required with a single-lift lock. In addition, each of the 2 small lock chambers requires tows to be broken into many units, each unit requiring 2 separate lockages; thus the total lockage time is 6 to 8 times that of a standard 110-foot by 600-foot single-lift lock.

Delays are also experienced for other reasons: Both the lower approach to lock No. 1 and the upper approach to Wilson locks are extremely difficult to navigate, requiring tows to proceed very slowly. Lock No. 1 is closed by high water approximately 1 week per year on the average, stopping all traffic. The Wilson locks must be closed for repairs more frequently than any other lock on the Tennessee River.

Traffic through the Muscle Shoals locks includes the most vital commerce on the river. These locks handle all of the valley's waterborne imports of grain, automobiles, asphalt, and molasses; all river traffic associated with the operation of AEC facilities at Oak Ridge, Volunteer Ordnance Works at Chattanooga, and the Huntsville, Ala., Arsenal; and the bulk of all Tennessee River traffic in petroleum products, iron and steel, scrap metals, fertilizer, phosphate rock, sulfur, and coke. Through Wilson locks, as for the river as a whole, coal shows the greatest rate of increase among all commodities shipped.

Tennessee River traffic is growing rapidly—in 1954 tonnage totaled 8,416,000 tons, or 276 percent of that in 1950; the 1955 tonnage will exceed 9 million. Traffic through the Wilson locks rose from 452,000 in 1945 to 2,114,000 in 1954. On the basis of experience to date and additional movements for which shippers have bought or are seeking to buy terminal sites, the traffic at Wilson locks will reach the practical locking capacity within the next 2 or 3 years. Serious delays are already being encountered and will become more severe before a new lock can be constructed.

Unless a new large lock is provided as soon as possible, the situation at Muscle Shoals will place a rigid ceiling on further development of traffic on the Tennessee River and will preclude realization of full value of the public investment in the Tennessee waterway.

The 1957 estimate includes $7,541,000 for continuing design work and beginning construction of a new lock at Wilson Dam. The new lock is planned to have a single-lift with 110-foot by 600-foot chamber and a dredged canal from the lower lock entrance to the head of Pickwick Reservoir, bypassing lock and dam No. 1. Construction of the new lock will require construction of a new highway bridge to clear the lock, replacing part of an existing highway across Wilson Dam. The plan provides for replacing the present lock and dam No. 1 by a new lock chamber immediately downstream from the existing locks at Wilson Dam. The existing locks at Wilson Dam will be kept in operating condition as an auxiliary for emergency standby service. The total cost of the project is estimated at $35 million.

2. Other navigation facilities—$89,000

Emergency needle dams at six locks are needed for use in case of accidental damage to the lock gates to permit unwatering the locks for making repairs. The 1957 estimate includes $15,000 for construction of foundations for storage of needles and supporting beams. The steel needles will be furnished by the Corps of Engineers, since they will be replacements of existing wooden needles.

Additional facilities at the Harriman coal terminal will be required in 1957 to handle economically the increased volume of traffic now estimated. In 1955, 13,950 tons of coal was handled through this terminal. The tonnage is expected to increase to 57,400 tons in 1956 and to 75,000 tons in 1957. The additional facilities required consist of a heavy-duty tractor to move cars, a car shaker to facilitate unloading wet coal, additional storage tracks, and a small equipment storage building at an estimated total cost of $52,000.

The 1957 estimate includes $22,000 for preliminary planning and design studies for future minor improvements at existing locks and completion of record drawings for completed improvements.

FLOOD CONTROL FACILITIES

Flood control facilities proposed will require an estimated expenditure of $300,000 in 1957. This sum provides for the purchase of a portion of additional land and land rights required on relatively small areas for Norris Reservoir up to elevation 1,044 feet. The acquisition of these lands is necessary to assure that the flood storage capacity can be utilized to the full extent for downstream flood protection, one of the primary purposes for which the Norris project was built. Completion of purchases is planned in 1958. The total acquisition program relates to about 300 small scattered tracts with a total area of about 670 acres. The lands under consideration are a small part of the total reservoir land area below this elevation (approximately 45,000 acres).

The spillway gates at Norris Dam can be raised to elevation 1,034 and are designed to permit an overflow well above this elevation. All structural features of the dam are designed for a maximum reservoir level of elevation 1,052 in order to protect the integrity of the dam in the most extreme flood. In the earlier stages of the project, elevation 1,047 was established as the reservoir level which would be reached in event of the maximum probable flood. Most of the land below this elevation was purchased in fee by TVA at that time. A small part of the acreage below elevation 1,047 was left outstanding because of difficulties of acquisition and the belief that these lands would not be developed and that acquisition would become easier with the passage of time. Recent studies have shown that filling the reservoir to elevation 1,044, with operation in accordance with the rule curve that has been developed, would result in the most effective use of the reservoir in the event of the maximum probable flood. In view of this, about 18,000 acres of the land which TVA holds above elevation 1,044 may be declared surplus and sold. On the other hand, the same studies show the necessity of acquiring all of the outstanding tracts below elevation 1,044. These outstanding tracts are being developed more and more each year and it has become evident that acquisition costs will rise rapidly in the future. Moreover, the existence of numerous developments below elevation 1,044 could serve to prevent TVA from using the reservoir in a great flood for the purpose for which the dam and reservoir were constructed. This problem is intensified by developments which are taking place downstream along the Clinch and Tennessee Rivers. Restrictions on filling the Norris Reservoir to avoid flooding of certain properties would require the release of water in such volume as to flood valuable properties downstream, including a part of the Oak Ridge development of AEC.

The amount estimated for 1957 following an expenditure of $49,000 for surveying and mapping in 1956 will enable TVA to carry out appraisal and title work and acquisition of approximately 100 of the 300 tracts required. It is planned to acquire the remaining 200 tracts in 1958 at a direct cost of $391,000. The total estimated cost of the land and land rights required, including applicable administrative and general expenses, is $750,000. The 18,000 acres of land now owned above the 1,044 elevation and which may be declared surplus and sold has an estimated present-day gross sales value of about $630,000.

INVESTIGATIONS FOR FUTURE PROJECTS

The planning and scheduling of additional navigation, flood control, power, and multipurpose projects require extensive preliminary engineering work. Potential project sites are investigated in order to select among alternative sites for needed future installations. Drilling and other field explorations are necessary to determine foundation characteristics and to compare the relative engineering feasibility of different locations. Preliminary design studies of sufficient scope are made to compare probable operating characteristics and costs.

Investigations of dam and reservoir projects, major navigation improvements, and flood-control facilities are financed from appropriations, and investigations of additional generating units at existing dams and new steam plants are financed from corporate funds (power proceeds). This plan of financing permits the scheduling of power investigations to be tied more closely to requirements of the overall power system.

The 1957 estimate of appropriated fund requirements is $172,000. Investigations are underway and in various stages of completion on several potential dam sites on tributaries of the Tennessee River If these investigations show promise of economic feasibility, planning reports will be prepared. These reports provide the basis for recommendation for construction at such time as system development makes such action desirable.

The status of the major investigations now underway is as follows: Investigation of the Surgoinsville site on the Holston River, primarily a power project, and the Melton Hill site on the Clinch River, a navigation and power project, are both well advanced. Further studies and discussions are required relating to the adjustment of facilities of other agencies located in the reservoir area. Investigations of the Fort Loudoun extension site, a navigation, flood control, and power project on the Little Tennessee River, was started some years ago. Early investigation suggested a dam without power installation to divert the Little Tennessee River into the Fort Loudoun pool. Studies on the feasibility of power installation at the proposed dam are now contemplated and will be completed in fiscal year 1957 unless it should become desirable to give other projects priority. Sites for possible multiple-purpose projects on tributaries of the Clinch and Watauga Rivers will be investigated further. The lock at Hales Bar Dam is substandard

and investigations have been started to determine the feasibility of its replacement. Other investigations are planned, particularly on the French Broad and its tributaries and on the Hiwassee.

The 1957 estimate of corporate fund requirements of $162,000 includes $148,000 for investigations of potential future steam plant sites and $14,000 for studying possibilities of installing additional hydrogenerating units at existing dams and for conducting related studies.

CHEMICAL FACILITIES

As directed by the Tennessee Valley Authority Act of 1933, the TVA maintains and operates chemical laboratories and production facilities at Wilson Dam, Ala., providing a national research and development center for new and improved fertilizers and munitions. The TVA fertilizer and munitions development program, which pertains primarily to the three major plant nutrients—nitrogen, phosphate, and potash—and to munitions products is described on pages 68 through 82.

In addition to their use for research and development projects related to fertilizers, TVA chemical facilities are also immediately available for use in national defense should that need for them arise.

The total estimate for chemical facilities for 1957 is $1,249.000. Details of the work covered by this estimate are described in the sections which follow.

This table shows obligations for chemical facilities:

	1955 actual	1956 estimate	1957 estimate
1. Phosphate lands and rights:			
Appropriated funds	$376, 683		$280, 000
Corporate funds		$290, 000	
2. Phosphate facilities	380, 513	401, 000	100. 000
3. Nitrogen facilities	55, 015	50, 000	50, 000
4. Combination fertilizer facilities	−96, 977	75, 000	600, 000
5. Equipment modifications to demonstrate new fertilizer processes	193, 485	56, 000	100, 000
6. Emergency plant replacements:			
Appropriated funds	222, 854		300, 000
Corporate funds		313, 000	
7. General chemical facilities	−194, 191	−26, 000	−181, 000
Total:			
Appropriated funds	937, 382	556, 000	1, 249. 000
Corporate funds		603, 000	
Total	937, 382	1, 159, 000	1, 249, 000

1. Phosphate lands and rights—$280,000

The phosphatic raw material used in TVA's experimental fertilizer and munitions production is obtained from the Tennessee and Florida phosphate fields. Tennessee brown phosphate deposits are limited in extent and are usually of too low grade to be used alone in electric furnaces. If the material is beneficiated, a loss of about 30 percent of phosphate occurs. However, the life of the Tennessee reserves can be materially extended and the rock economically utilized for electric-furnace charge if it is blended with a higher grade material such as occurs in the Florida hard rock field. TVA needs a moderate reserve in Florida to assure a source of supply of the grade of phosphate needed for blending.

The 1957 estimate of $280,000 provides for the continuation of prospesting for phosphate deposits in both Tennessee and Florida and for the purchase of reserves in the Florida hard rock field. Minimum purchases will continue in the Tennessee reserves to consolidate present holdings in this field.

2. Phosphate facilities—$100,000

The 1957 estimate of $100,000 for phosphate facilities is for technological improvements to complete developments under way and to improve operating economy and efficiency. Among these are further improvements to calcium metaphosphate facilities, new byproduct processing facilities,. and phosphorus raw material preparation facilities. Other opportunities may result from continuing plant studies. The following are some examples of improvements recently made which show the character and purpose of technological improvements covered by this estimate. Improvements made in the calcium metaphosphate unit at a cost of about $107,000 overcame a production handicap on the furnace. provided flexibility in operation, and reduced shutdown delays, thus lowering

unit costs. These improvements make the development more attractive to industry. Further improvements will be made to complete the development. A gas cooler and auxiliary phosphorus condenser were installed to recover phosphorus from a byproduct carbon monoxide gas line supplying fuel to nodulizing kilns. This improved kiln operation and minimized hazards. Installation of this equipment was completed at a cost of about $16,000. Phosphorus recovered in less than 1 year equaled the investment. Other new phosphate developments are in progress, including economical utilization of an unavoidable byproduct slag. Development of improved phosphorus raw material preparation processes is under way aimed at reducing operating costs.

3. Nitrogen facilities—$50,000

The 1957 estimate of $50,000 provides for various technical improvements of the kind normally required to maintain efficient and economical operations. It is through such improvements that methods of reducing operating costs can be applied and demonstrated. These miscellaneous improvements cannot always be identified very far in advance, but they must be provided for in the interest of efficiency and economy. In 1955, for example, alterations were made to an ammonium nitrate crystallizer to improve the operating flexibility of the plant. A truck-loading shed, offering protection to employees and equipment, was constructed.

4. Combination fertilizer facilities—$600,000

The Florida phosphate deposits contain a layer of material, called leached zone ore, overlying the phosphate rock. The phosphate in the leached zone is largely in the form of aluminum phosphate rather than calcium phosphate normally mined for use in the production of commercial fertilizers. The average P_2O_5 content is about 12 percent. The leached zone ore contains uranium also; the ratio of its uranium oxide content to its P_2O_5 content is about three times that of ordinary phosphate ore. At present the leached zone material is discarded as a waste overburden, expensive to move. Fourteen million tons of it is discarded each year, containing some uranium and about 1,500,000 tons of P_2O_5, the equivalent of half the P_2O_5 in the Florida phosphate rock used or mined annually.

The AEC is interested in the recovery of uranium from this source as a byproduct of commercial operations. The TVA is interested in the use of the material in conserving phosphate resources, in the production of fertilizer, and in the national defense.

In 1952, AEC asked TVA to conduct research on the manufacture of fertilizer and the recovery of byproduct uranium from Florida leached zone ore. In its budget program for 1956 TVA discussed this process development work, which has been carried through the pilot-plant stage.

AEC engaged a private engineering firm to make an evaluation of the TVA process. The findings of these engineers indicate the commercial feasibility of the process. They also found the uranium recovery aspects of the process to be technically feasible.

Tests made independently by TVA and the USDA indicate that the physical properties of the fertilizer products are satisfactory. There is very little information on the effectiveness and use of aluminum phosphates as fertilizer; therefore the product needs extensive testing. Since the leached zone ore is so different from the ores normally used as a source of phosphate, the fertilizer industry will not be in a position to utilize it until experimental production and field demonstration of the fertilizer made from it are completed.

The 1957 estimate of $600,000 provides for beginning construction at Wilson Dam, Ala., of a demonstration-scale unit, to cost $1,219,000, for production of a 15–15–15 fertilizer. The unit will have a capacity of 25,000 tons, only enough to demonstrate the process and the product. This project does not involve a demonstration unit for uranium recovery. It is anticipated that AEC may ultimately be interested in demonstrating the recovery of uranium through the TVA process. The investment for the unit is less than 5 percent of that required for the commercial plant estimated by the engineering firm retained by AEC. The low investment for the TVA unit is made possible by its smaller size and the extensive use of existing equipment and facilities at the TVA chemical plant. Technical information obtained from plant operation and from fertilizer tests will be made available to the fertilizer industry.

Successful demonstration of an economical process for producing a high-analysis fertilizer from leached zone ore and the development of a market for it will encourage the fertilizer industry to use the material now wasted. This in turn will reduce the cost of mining the phosphate going into fertilizer, will extend the life of

the Florida phosphate reserves by nearly half, and will help in the national defense by making possible recovery of a significant domestic source of uranium. Such a demonstration and development will take several years. Therefore it is imperative that they begin soon in order that the advantages of utilizing the leached zone ores may be realized as early as possible.

5. Equipment modifications to demonstrate new fertilizer processes—$100,000

All of TVA's fertilizer facilities are devoted to research, development, and demonstration of new processes and products. If a part of the plant can be modified to demonstrate a new process, it is so altered. Raw materials or intermediate products formerly used in the manufacture of an established fertilizer compound where feasible are used in the manufacture of another. This makes it possible to achieve considerable flexibility in administering research and demonstration projects, to provide facilities for demonstrating some new processes without costly construction, and to change products without increasing basic plant capacity.

For example, during 1955 TVA modified a part of its ammonium nitrate production facilities to permit the demonstration-scale production of a new product, diammonium phosphate. These modified facilities are being used to produce about 20,000 tons of diammonium phosphate a year. Some TVA phosphoric acid and ammonia, which formerly went into the production of concentrated superphosphate and ammonium nitrate, are going into the new product, with consequent reductions in the output of these fertilizers.

Other high-anaylsis, multicomponent fertilizers which can be produced from TVA's basic raw materials and intermediate products are in various stages of development. The most promising one is for production of ammonium phosphate-nitrate fertilizer. Another attractive process that may be ready for demonstration in 1957 involves the production of potassium-calcium phosphate. The 1957 estimate covers modifications of existing equipment to demonstrate these or other new processes as they are developed through the pilot-plant stage.

6. Emergency plant replacements—$300,000

An estimate of $300,000 is included for emergency plant replacements in 1957. This is necessary to assure continuity of operations and is for the replacement of wornout, obsolete, or inadequate equipment and for installation of facilities to protect the health and safety of employees. These requirements cannot be anticipated item by item but must be provided for in an activity of the scope of the TVA fertilizer and munitions program. Examples of replacements which may be required on an emergency basis are: electric furnace shell, crucible, transformer, precipitator, catalyst basket, nitric acid absorption towers, and railroad facilities.

7. General chemical facilities— —$181,000

The 1957 estimate includes $149,000 for work tools and equipment, preliminary investigations and design studies, and miscellaneous improvements to general chemical facilities. A credit of $330,000 is taken here for depreciation [1] on general chemical plant and shop facilities.

GENERAL FACILITIES

General facilities include such items as office furniture and equipment, transportation facilities, plant additions and improvements on general-use reservations, and construction equipment not assigned to specific projects. These facilities are used in all TVA activities.

[1] NOTE.—In the interest of economy and efficiency, TVA general facilities and equipment are pooled and made available to programs and projects on a rental basis. The rental rates include appropriate provision for depreciation; therefore, budget requirements for each program and project include charges for depreciation. Since depreciation is a type of expense not requiring current outlay of funds, the total of the depreciation charges is offset to avoid overstatement of fund requirements. The $330,000 credit budgeted here offsets total charges included in program and project estimates as depreciation on chemical general facilities.

This table shows obligations for general facilities:

	1955 actual	1956 estimate	1957 estimate
1. General construction equipment and inventories	$644,133	$280,000	$164,000
2. Office facilities and equipment	152,160	−31,000	−70,000
3. Transportation facilities and equipment	−274,972	2,000	−57,000
4. Other general facilities and equipment	27,550	74,921	17,000
Total	548,871	325,921	54,000

1. General construction equipment and inventories—$164,000

This category reflects changes in inventories maintained for general construction purposes; changes in the net investment in a pool of trucks, tractors, dirt-moving equipment, and other machinery which is shifted from project to project with changing construction needs; and plant and equipment held for future construction use.

The estimate for 1957 includes (1) $20,000 for purchase of new construction equipment for general use; (2) $24,000 for increased inventories resulting from transfers of miscellaneous construction materials from completed construction projects to general inventory accounts for future use, with offsetting credits in accounts for construction of various projects; and (3) $120,000 for equipment transfers from completed construction projects to accounts for equipment held for future use, with offsetting credits in accounts for construction of various projects and incidental costs of storing plant and equipment held for future use.

2. Office facilities and equipment—$70,000

This table shows obligations for office facilities and equipment:

	1955 actual	1956 estimate	1957 estimate
Office equipment	$262,514	$140,000	$110,000
Building equipment	86,848	20,000	18,000
Equipment for office shops	24,112	40,000	35,000
Miscellaneous facilities		4,000	7,000
Subtotal	373,474	204,000	170,000
Less depreciation [1] on facilities and equipment in service	221,314	235,000	240,000
Total	152,160	−31,000	−70,000

[1] See footnote 2 on p. 184.

The estimate of $110,000 for office equipment provides for replacing wornout or obsolete equipment such as typewriters, adding machines, bookkeeping machines, and calculators; and for minor additional new items of equipment. The estimate takes fully into consideration furniture and equipment released from completed construction projects.

The estimate of $18,000 for building equipment covers miscellaneous building equipment additions and replacements such as stokers and boilers, air-conditioning equipment, and fire-protection devices.

An estimated $35,000 will be required for equipment such as reproduction machines, stapling machines, motors, ventilating fans, portable heaters, shelving, etc., much of which is for replacement purposes. The estimate of $7,000 for miscellaneous facilities covers minor replacements and additions to the telephone system at Wilson Dam.

3. Transportation facilities and equipment, $57,000

This table shows obligations for transportation facilities and equipment:

	1955 actual	1956 estimate	1957 estimate
Passenger sedans	$182,980	$284,000	$284,000
Trucks and heavy mobile equipment	206,658	458,000	474,000
Aircraft	36,630		
Shop and special service equipment	16,400	60,000	60,000
Garage facilities	6,581		
Subtotal	449,249	802,000	818,000
Less depreciation [1] on facilities and equipment in service	724,221	800,000	875,000
Total	−274,972	2,000	−57,000

[1] See footnote 2 below.

The estimate of $284,000 for passenger sedans provides for the purchase of 211 vehicles as replacement for an equal number which will have reached an age or mileage accumulation where it is more economical to replace them than to make major repairs or complete the rehabilitation needed in order to extend their service life. All of the 211 vehicles to be retired will be within the Government vehicle retirement standards. Sixty-seven of these will have accumulated 70,000 miles or more, and the remainder will have attained from 60,000 to 70,000 miles. Replacement of these vehicles is necessary in view of the forecast of sedan utilization in 1957 of more than 12 million miles and the fact that at the beginning of the year these vehicles will have either reached or closely approached the stage where retirement is indicated. It is only through an orderly replacement program such as this that transportation essential in the conduct of TVA operations, which extend over an area of more than 80,000 square miles, may be provided on an adequate, dependable, and economical basis.

The estimate of $474,000 for trucks and heavy mobile equipment covers the purchase for use in operations, maintenance, and construction activities of 60 light trucks, 40 medium trucks, 12 heavy trucks, 15 construction machines, and 10 heavy trailers to replace equipment scheduled to be retired. All of the light and medium trucks to be retired will be within Government vehicle retirement standards. While there are no Government standards applying to the remaining items of equipment proposed for replacement, these will have also reached an age or physical condition where it is more economical to replace than to make the major repairs necessary to extend their service life. The heavy trucks to be replaced will be 7 to 10 years old, and the construction machines and trailers will have been in use from 8 to 15 years.

The estimate of $60,000 for shop and service equipment provides $10,000 for miscellaneous equipment items needed in transportation shops such as lathes grinders, drill presses, and alinement machines; and $50,000 to cover the cost of installing special equipment on trucks and other vehicles.

4. Other general facilities and equipment, $17,000

The 1957 estimate of $17,000 for other general facilities and equipment consists of $87,000 for minor improvements on the Wilson Reservation, engineering equipment, and general plant and equipment items required for program activities and administrative services, less a credit of $70,000 for depreciation [2] on facilities in service.

FACILITIES NEEDED TO MEET POWER DEFICIENCY

Mr. RABAUT. From your statement it would appear that regardless of the new Memphis plant, you expect to have a power deficiency by the end of calendar 1957; is that correct?

[2] NOTE.—In the interest of economy and efficiency, TVA general facilities and equipment are pooled and made available to programs and projects on a rental basis. The rental rates include appropriate provision for depreciation; therefore, budget requirements for each program and project include charges for depreciation. Since depreciation is a type of expense not requiring current outlay of funds the total of the depreciation charges must be deducted to avoid overstatement of fund requirements. The credits of $240,000 for office facilities and equipment, $875,000 for transportation facilities and equipment, and $70,000 for other general facilities and equipment offset total charges included in program and project estimates as depreciation on TVA pooled general facilities.

Mr. VOGEL. It is a very small deficiency at the end of 1957. The effect of the Memphis plant would be nil at that time because the plant proposed by Memphis will not come in until July 1 of 1958, even according to their best plans.

Mr. RABAUT. What do you mean by a small deficiency?

Mr. VOGEL. One hundred twenty-seven thousand kilowatts.

Mr. WAGNER. I believe that deficiency does not contemplate any additional capacity.

Mr. KAMPMEIER. The figure to which you refer, I believe—the one on page 12—shows the relationship between capacity now under construction and estimated demands; in other words, before the beginning of John Sevier unit 4. The purpose of John Sevier unit 4 is to wipe out that deficiency.

Mr. VOGEL. As you know, that is a matter which is being considered in the supplemental. I think you have indicated that, Mr. Chairman.

Mr. RABAUT. Is it correct to say that you will have an adequate power capacity if you complete John Sevier unit No. 4 and Johnsonville units 7 and 8 before the end of 1958?

Mr. KAMPMEIER. On the basis of the presently estimated demands, the addition of John Sevier 4 in 1957 and Johnsonville units 7 and 8 in 1958 would wipe out the deficiency which is indicated now. Construction of those units would provide us with just enough capacity, and scarcely any more, to meet the presently foreseeable demands. They would not provide capacity for any unanticipated load growth, and therefore I would not want to say that it would be an adequate supply, and most certainly it would not be an ample supply. It would merely be enough to meet the presently foreseeable demand.

Mr. RABAUT. I set a date there, adequate supply by the end of 1958.

Mr. KAMPMEIER. That is right. The demands in 1958 foreseeable now, without allowing for any presently unanticipated load growth.

Mr. RABAUT. You do not figure it would be remarkably safe. You figure that you might have a load growth which you do not anticipate at this time. Is that it?

Mr. KAMPMEIER. That is correct. The figures show a projected demand of 10 million kilowatts at the end of 1958. Compared with that present estimate of demand, the three units would result in a margin of one-tenth of 1 percent. That is practically no margin at all, and that load of 10 million kilowatts is exclusive, for example, of any of the Memphis load. It assumes that Memphis will have been able to complete their plant of three units, and be ready to carry their load in its entirety before the end of 1958, which is an optimistic assumption. But it is that sort of assumption on which the figures are based.

Mr. TABER. Fiscal or calendar years we are talking of now?

Mr. RABAUT. Calendar.

POWER REDUCTION DUE TO DROUGHTS AND FLOODS

In estimating your power producing capacity, I note that you consider the effects of floods and droughts which you estimate can reduce your hydro capacity by a half million kilowatts. You apparently make allowances for a loss of three-fourths of this amount, or 375,000 kilowatts.

What has your actual past experience been as compared with this estimate?

Mr. KAMPMEIER. Our experience has been that on more than one occasion there has been a reduction in capacity greater than the 375,000 kilowatts—in fact greater than 500,000 kilowatts.

The allowance we make is intended to be, you might say, a normal allowance for what would be fairly probable in the way of a reduction.

Mr. RABAUT. A happy medium?

Mr. KAMPMEIER. A happy medium. Sometimes it is greater and frequently less.

Mr. PHILLIPS. I didn't understand what the 375,000 figure was.

Mr. KAMPMEIER. The chairman was explaining the allowance made, in computing our so-called assured load carrying capacity, for specified reductions in hydro capability. I would want to check to be sure whether 375,000 is a precise figure, but it is in that order.

We make an allowance for a loss of capacity somewhat smaller than the largest that is sometimes experienced.

Mr. PHILLIPS. Loss due to what?

Mr. KAMPMEIER. Due to two things—either the tributary reservoirs are lower than normal levels, or the main river plants are affected by high water. Both reduce the head and, therefore, the generating capacity.

PUBLIC SERVICE FACILITIES

Mr. RABAUT. You point out on page 21 that public service facilities planned for dam reservations were deferred during World War II, and that you have a backlog of uncompleted items.

For how many more years will we be making improvements deferred because of World War II?

Mr. VOGEL. The answer to that, Mr. Chairman, is until about 1960.

OBSOLETE MECHANISM AT WILSON DAM

Mr. RABAUT. You speak of obsolete lock mechanisms at Wilson Dam, and say failure could occur which would put the locks out of service. Have the locks ever been out of service for any extended period?

Mr. VOGEL. Not for any extended period because of mechanical failure, although one of the locks frequently floods out. Investigations have been made of the tunnels and of the locks themselves, and they are indicated to be in very poor structural condition so that a failure is possible at almost any time.

Another thing bothering us very much at the moment is the fact that the lock chambers built more than 30 years ago are of an earlier standard and are not sufficient to carry the large modern tows which have to be broken up. Thus there results a considerable delay and piling up of traffic at that particular lock.

Mr. RABAUT. You make a suggestion of about $7½ million for this. Is that right?

Mr. VOGEL. Yes, sir. We feel we can gear up to expend that amount profitably and economically in fiscal 1957, and in order to get the most for what we are doing we should have that large a program.

ACQUISITION AND DISPOSAL OF LAND

Mr. RABAUT. I note that you need 670 acres of land to bring the Norris Reservoir up to 1,044 feet. You expect this to cost you $750,000. You have 18,000 acres which you hope to dispose of for $630,000.

Why is it the land is costing you in excess of $1,000 an acre and that which you are selling will go for $35 an acre?

Mr. VOGEL. Because the land which we are selling is higher hillside, less usable, less desirable land. The land which we need in order that we may have full control over our reservoir operations and may utilize this reservoir to the maximum in preventing possible floods of the future, which incidentally impose a possible threat to Oak Ridge, Clinton, and other communities downstream, those lands have been built up by small communities, stores, people catering to recreational interests, so that they have taken on a larger value.

Actually the amount of acreage which we are selling is larger than the amount of acreage which we are buying, and it is entirely a matter of value as developed by the land usage itself.

Mr. RABAUT. What procedure would you employ in disposing of that land?

Mr. VOGEL. It would be done by public sale, sir; auction.

Mr. RABAUT. Public sale with proper announcements and plenty of time?

Mr. VOGEL. Yes, indeed.

Mr. RABAUT. Everybody would have a chance?

Mr. VOGEL. Certainly.

Mr. RABAUT. How do you go about buying the lands you want to purchase?

Mr. VOGEL. We have a regular division of our organization which handles that and what we consider to be proper prices are offered based upon the opinion of experienced people.

Mr. RABAUT. Who decides what a proper price is?

Mr. VOGEL. Our land people decide that. They make an offer. If the offer cannot be accepted or is not accepted by the owner, we have to resort to condemnation in the courts.

Mr. RABAUT. Have you had to condemn some lands?

Mr. VOGEL. Oh, yes, sir, on many occasions.

IMPROVEMENTS IN CHEMICAL FACILITIES

Mr. RABAUT. Referring to technical improvements in your chemical facilities, you say "these improvements cannot always be identified very far in advance, but they must be provided for in the interest of efficiency and economy." One of the two examples cited is a truck-loading shed. What makes such a need difficult to forecast?

Mr. VOGEL. I will let our fertilizer people, Mr. Chairman, explain that particular item.

Mr. RABAUT. All right.

Mr. VOGEL. I would like to say in general, however, that the reason it is difficult to forecast so many of these expenditures in detail is that the programs are in the nature of research, and the very nature of research is such that you never know exactly on what line you will

come out. You may start on a particular path, but sometimes your work takes a peculiar turn that you have not anticipated.

But as to the specific item, I will ask Mr. Young for the answer.

Mr. YOUNG. It was anticipated that some of these new fertilizers would move out largely in railroad cars. It was found in practice that we had a heavy demand for truck shipments and didn't have any provisions for handling those truck shipments so we could keep the material dry while it was being loaded on trucks. That is the reason for that particular item.

Mr. RABAUT. It couldn't have been a great problem. That is rather laboring the point.

Mr. WAGNER. It was just an example of the kind of thing that can add up to a substantial amount, Mr. Chairman.

NAVIGATION OPERATIONS

Mr. RABAUT. Let us now turn to the subject of navigation operations and insert pages 42 to 45 of the justifications.

(The information referred to follows:)

NAVIGATION OPERATIONS

Appropriated fund requirements for direct navigation expense in 1957 are $253,000. The estimate for 1956 is $246,000, and actual expense for 1955 is $263,216. Net expense figures for 1957, 1956, and 1955 are $2,870,000, $2,754,000, and $2,820,230, respectively. Net expense is the direct expense of the program less income from river terminals plus depreciation on navigation facilities (which involves no cash outlay), administrative and general expenses, and a portion of multipurpose reservoir operations expense.

This table shows the breakdown of actual expense for 1955 and estimates for 1956 and 1957:

	1955 actual	1956 estimate	1957 estimate
Income	$22,469	$30,000	$33,000
Expenses:			
Direct expenses:			
1. Navigation engineering and investigations	228,789	213,000	215,000
2. Operation of public-use river terminals	19,167	24,000	29,000
3. Power for lock operations	8,270	8,000	8,000
4. Maintenance of navigation facilities	6,990	1,000	1,000
Total direct expenses	263,216	246,000	253,000
Distribution of administrative and general expenses	20,930	25,000	30,000
Total	284,146	271,000	283,000
Allocated from multipurpose reservoir operations	1,157,666	1,107,000	1,214,000
Total expenses before depreciation	1,441,812	1,378,000	1,497,000
Depreciation on navigation facilities	606,149	610,000	610,000
Depreciation allocated from multipurpose reservoir operations	794,738	796,000	796,000
Total expenses	2,842,699	2,784,000	2,903,000
Net expense of navigation operations	2,820,230	2,754,000	2,870,000

The TVA Act of 1933 assigns to TVA the primary Federal responsibility for improvement of the Tennessee River and its tributaries for navigation. The 9-foot navigation channel is now complete and the Tennessee Valley is linked with the vast industrial and trade area served by the inland waterway system. The operation of the navigation channel is a cooperative enterprise of TVA, the Corps of Engineers, and the United States Coast Guard. All barge facilities are operated by private enterprise.

The improved Tennessee River is not an isolated communication artery of regional significance only. It is a part of a national investment in an inland waterway system connecting 19 States and their trade areas. During the past year 44 of the 55 barge lines and other firms whose towboats operate on the Tennessee were nonvalley firms. Sixty-three percent of the freight handled in 1954 originated outside the valley or was destined for points outside the valley.

Traffic on the Tennessee in 1954, the most recent year for which official figures are available, was the highest on record—8,415,769 tons and 1,236,547,906 ton-miles. These figures are, respectively, 18 and 21 percent above corresponding figures for 1953, the year of next highest traffic. From this record volume of traffic, shippers realized an estimated $14 million in transportation savings, of which more than $13 million was realized on freight originating outside the valley or moving from the valley to outside points. The total savings exceeded the combined navigation operations costs of the Corps of Engineers, Coast Guard, and TVA by some $10.3 million, which represents a return of 6.5 percent on the original investment in navigation facilities on the Tennessee. Predicted traffic for 1955 will exceed that for 1954 by about 1 million tons and 250 million ton-miles, according to preliminary estimates.

1. Navigation engineering and investigations, $215,000

TVA is directed both to improve navigation facilities and to promote navigation use on the Tennessee River. Through the construction of navigation facilities, TVA has provided the improved channel authorized by the Congress. Through engineering and other studies, TVA has sought full use of the river for transportation service in order that full value may be received from the original Federal investment of $158 million in Tennessee River navigation facilities.

This work supplements but does not duplicate that of any other Federal agency. Inasmuch as TVA is responsible for developing navigation in the valley along with the development of the river for other beneficial uses, it must undertake a variety of activities.

TVA performs engineering work to assure that physical facilities—locks, channels, safety harbors, and navigation aids—are operated, maintained, and modified or improved to meet the navigation needs of the waterway and to develop and make available basic technical data and services required by the public in using the waterway. TVA engages in transportation economics studies to investigate and appraise the opportunities for use of the waterway, the barriers inhibiting its use, and the benefits coming from the Federal investment in navigation facilities. The work is largely of a continuing nature comprising in part day-to-day operating problems of the waterway and in part longer range investigations leading to recommendations for improved facilities.

Navigation engineering and investigations also include the review and determination of the effects of proposed structures on navigation, as required by section 26a of the TVA Act, and revision of reservoir navigation charts and maintenance of 1,100 markers on more than 225 miles of secondary channels. TVA also provides barge lines, shippers, and others with technical data concerning the waterway.

2. Operation of public-use river terminals, $29,000

During World War II the TVA built four public-use general commodity terminals, which are now leased to private operators. These facilities are located at Knoxville and Chattanooga, Tenn., and at Decatur and Guntersville, Ala. Since they are the only public-use facilities at those ports, they make it possible for many small shippers to use the waterway. TVA receives a percentage of the gross income from the operation of these terminals.

TVA owns and operates a coal terminal at Harriman, Tenn. It is expected that 75,000 tons of coal will be handled through this terminal during fiscal year 1957, compared with an estimate of 57,400 tons for 1956. As soon as the volume of business makes operation of this facility attractive to private enterprise, TVA hopes to dispose of it under a lease-purchase agreement.

Direct TVA expense for terminal operation in 1957 is estimated at $29,000. Income is estimated at $33,000 for the year.

3. Power for lock operations, $8,000

Navigation locks on the Tennessee River are operated by the Corps of Engineers. TVA furnishes the power required in their operation at no cost to the Army. It is estimated that the cost of electric power will be $8,000 in 1957.

4. Maintenance of navigation facilities, $1,000

Inspections are made of navigation structures to determine if they are functioning as designed, and recommendations for needed repairs are made. The estimate of $1,000 will cover this maintenance work in 1957.

Mr. RABAUT. What accounts for the fact that though expenses for terminal operations will increase by $5,000, the income will increase by only $3,000?

Mr. WAGNER. The increase in expenditures is for some work at the Harriman public use coal terminal and the increase in income is due to an estimated increase in traffic at the same point. Some of the work to be done will have lasting value beyond the year in which it is budgeted.

Mr. VOGEL. I think this point was brought out last year, but I might repeat it. We are trying to dispose of these terminals as rapidly as possible and as quickly as we can find commercial enterprises which will be interested in their operation. We feel that will come about in a reasonably short period of time now.

FLOOD-CONTROL OPERATIONS

Mr. RABAUT. We will now turn to the flood-control operations and insert in the record pages 46 through 51 of the justifications.

(Information referred to follows:)

FLOOD CONTROL OPERATIONS

Operation of the flood-control system of the Tennessee River consists principally of (1) using storage space in upstream reservoirs for seasonal retention of excessive runoff and (2) regulating the discharges from reservoirs to rates of flow which can safely be handled by downstream channels and reservoirs. This system not only averts damage to cities and agricultural lands in the Tennessee Valley but also reduces flood crests on the lower Ohio and Mississippi rivers. Regulation afforded by the Tennessee River system can reduce flood crests at Cairo, Ill., by from 2 to 4 feet below those that would otherwise occur and by lesser amounts on the Mississippi River as far south as the mouth of the Red River. Reductions of flood heights by nearly 2 feet at Cairo have been accomplished several times, averting considerable damage to that city and to properties farther down the Mississippi River. Since the first project in the TVA system was placed in operation (1936), regulation of TVA reservoirs to reduce flood crests has averted damage of about $53 million at the city of Chattanooga alone and about $6,500,000 on the lower Ohio and Mississippi rivers. The estimated average benefits of the TVA flood-control system are about $11 million a year, affording a rate of return of about 5 percent on the investment in flood-control facilities.

The major items of cost consist of a portion of the expense of operation of multipurpose reservoirs and depreciation of major structures. Neither of these requires a direct appropriation for flood-control purposes because fund requirements for operation of multipurpose reservoirs are included in the multipurpose reservoir operations program (p. 58), and depreciation is an accounting transaction requiring no current outlay of funds.

The total expense, including the two items mentioned above, of flood-control operations is estimated at $2,691,000 in 1957, compared to $2,545,000 in 1956 and actual expenses of $2,585,885 in 1955.

This table shows detail of the total expense of flood-control operations; actual for 1955, and estimates for 1956 and 1957:

	1955 actual	1956 estimate	1957 estimate
Direct expenses:			
System flood-control studies and investigations	$93,129	$85,000	$85,000
Local flood studies and cooperation with other agencies	82,414	90,000	126,000
Total direct expenses	175,543	175,000	211,000
Distribution of administrative and general expenses	7,535	10,000	15,000
Total	183,078	185,000	226,000
Allocated from multipurpose reservoir operations	1,168,996	1,121,000	1,226,000
Total expenses before depreciation	1,352,074	1,306,000	1,452,000
Depreciation on flood-control facilities	321,335	325,000	325,000
Depreciation allocated from multipurpose reservoir operations	912,476	914,000	914,000
Total expense of flood-control operations	2,585,885	2,545,000	2,691,000

The activities which require appropriated funds consist of (1) system flood-control studies and investigations, which include collection and analysis of flood data, studies to improve operations of the eixsting system, and studies of potential projects which could affect flood control on the Tennessee River system; and (2) local flood studies and cooperation with other agencies, which provide technical advice and assistance to State and local governments to encourage their assumption of responsibility for solution of local urban and rural flood problems. The 1957 estimate for these activities is $211,000, consisting of $85,000 for system flood-control studies and investigations and $126,000 for local flood studies and cooperation with other agencies.

System flood-control studies and investigations

The estimates for collection and analysis of data and studies of the existing system and potential projects total $85,000 in 1957, the same as in 1956, and are based on streamflow occurrences expected to be experienced in an average year. When extremely high streamflows or repeated moderately high streamflows occur, special investigations, studies, and reports must be made on the flows occurring, and the relation between water levels actually experienced and those which would have occurred without regulation must be established. Information thus gained not only is valuable to aid in determining guides for reservoir operations in future similar circumstances but also is necessary to provide facts to answer damage claims which may be asserted. If such high streamflows occur in either 1956 or 1957, the direct flood-control expenses might exceed the estimates, but in such an event the additional funds required would be provided by adjustments within the total budget.

The 1957 estimate of $85,000 for system flood-control studies and investigations is based on past years' experience as to staff services required in a year of average streamflows.

Local flood studies and cooperation with other agencies

TVA has a continuing interest in local flood problems because their solution is important to the development of the valley. In the Tennessee Valley, as in other parts of the Nation, little initiative has been taken by States and cities in assuming responsibility for local flood problems, partly because the Flood Control Act of 1936 and subsequent legislation assume for the Federal Government the major share of the financial responsibility for solutions to such problems. There is much that communities, counties, and States could and should do for themselves in these local flood situations. In many cases the construction of protective works is within the financial capability of the communities involved. The assumption by the State and the local community of joint responsibility for the construction of flood protection works of a local nature would relieve the financial burden of the Federal Government and encourage construction of such works only where they are sound and economically justified. Zoning by the State, county, or municipal governments against certain types of construction in hazardous areas is being given greater consideration and much wider application. Effectiveness of such zoning is increased where there is less chance to pass the responsibility for these problems to the Federal Government.

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The results of the program started by TVA in 1954 to assist the States and local communities in their organization for flood protection are encouraging. Considerable interest in this program is being shown by the States of Tennessee, Kentucky, Alabama, Virginia, and North Carolina. TVA is working closely with State agencies responsible for urban and regional planning in those States. Past history of occurrence of floods of different magnitude, as well as information on the size of floods which may be expected, has been prepared for several communities having flood problems in Tennessee, Kentucky, North Carolina, and Alabama. Such information, including flood profiles and maps showing flood hazard areas, is being used by the Tennessee State Planning Commission to assist local planning commissions in writing zoning ordinances. As a result of this work, for example, Pulaski, Tenn., on recommendation of the Tennessee State Planning Commission, has adopted a zoning ordinance which will go far toward reducing damages from local floods in that city. Cleveland, Tenn., has requested assistance in determining the extent of the flood hazard as an aid in selecting a proper location for a new school building. At Lewisburg, Tenn., cooperative action by the city, Federal Housing Administration, and Veterans' Administration in utilizing flood data furnished by TVA prevented the opening of two subdivisions in areas subject to flooding. Without these data these proposed subdivisions might have been approved and financing might have been arranged for 20 or more houses that would have been flooded 4 to 5 feet by a flood which occurred in March 1955. The Maggie community in western North Carolina, with a high potential as a tourist center, is using TVA flood data to guide its development.

Communities in the valley are developing and expanding constantly. Some of them have already expanded unduly into flood plains and need flood reports as bases for studying the feasibility of protecting the improvements or redirecting future expansion. Most communities are not fully aware of their opportunities for reducing their local flood losses by considering the flood problems and guiding future developments into safe areas through zoning ordinances and subdivision regulations. Timely contacts and technical assistance can help very much in this field. The end result will be less development in flood areas and therefore less demand on the Federal Government for flood-protection structures as remedial measures or for disaster relief if flooding occurs.

There are more than 80 communities in the valley having local flood problems where this program could be of direct assistance. Reports have been completed for 10 of these communities and are expected to be completed for 8 more by the end of fiscal year 1956. The 1957 estimate provides for completing 11 additional reports, leaving about 50 communities to be served in later years.

The 1957 estimate of $126,000 for local flood studies and cooperation with other agencies provides for completing flood reports for 11 communities and for contacts with these and other communities to interpret the significance of the data furnished and to provide technical guidance in its application.

LOCAL RESPONSIBILITY FOR FLOOD CONTROL

Mr. RABAUT. I note that you say on page 48 that "little initiative has been taken by States and cities in assuming responsibility for flood control problems" and that there is much that they could and should do for themselves. Do I understand that your increased local flood studies are chiefly to guide these communities in their new building planning, or assist them in deciding to construct their own flood-control projects?

Mr. VOGEL. That is almost entirely the purpose of these studies, Mr. Chairman.

Mr. RABAUT. Apart from what I said, what else is involved? You say "almost entirely".

Mr. VOGEL. Well, the purpose ultimately is to indicate to these localities what they may best do in order to zone their localities, making proper use of marginal or flood lands so that future Federal expenditures may not be necessary in order to give those the full protection that would be needed if they were occupied by human habitation.

Mr. EVINS. Will the gentleman yield for an observation?

Mr. RABAUT. Yes.

Mr. EVINS. Has it become a local matter for States and counties and municipalities to assume responsibility for flood control? I always thought flood control was a national responsibility and this committee has been making immense appropriations for flood control throughout the Nation. I do not think the subject is one to be turned over completely to local communities.

Mr. VOGEL. There is a great deal I might say about this. That same subject, which you have brought up, has been the subject for a recent discussion by our Board not more than a few days ago and the Board is presently engaged with its staff in reviewing its policy. I am not prepared to say at this time what answer it will come up with, Mr. Evins. However, the view has been expressed that surely the people of the Tennessee Valley should not expect to receive less favorable treatment than would be normally accorded to people of other regions as a result of national policy. We are examining the whole matter at this time.

Mr. EVINS. One further question, if I may, Mr. Chairman.

Mr. RABAUT. All right.

Mr. EVINS. When you were with the Corps of Engineers, General Vogel, rather than as Chairman of the TVA Board, at that time did you take the position that flood control was a matter for local communities or was such a problem considered by the Corps of Engineers as a national responsibility?

Mr. VOGEL. Partly, Mr. Evins. The general policy in connection with a local project is, of course, to determine first of all if it is a matter of general flood control or does it relate to purely local drainage. If it is entirely local drainage that is a different thing. If the water is coming from a distant place, and cannot be controlled by the locality, the Federal Government assumes a responsibility, but in every case, so far as I know, local interests assume the responsibility for providing the necessary lands, easements, rights-of-way, and holding the United States free from damages.

As you probably know, the reason that full flood protection has not been accomplished in the city of Chattanooga is that local interests have not met those conditions which were imposed some time ago.

Mr. EVINS. Generally speaking, flood-control protection on major streams is a national-problem matter, would you not agree General Vogel?

Mr. VOGEL. Yes.

Mr. CANNON. May I interrupt off the record.

(Discussion off the record.)

Mr. VOGEL. I think I have stated my personal attitude that I feel the Tennessee Valley should not receive any less help than is accorded to all other regions of the Nation under a national policy. It is all one country.

Mr. EVINS. I was very much interested in the question brought out in the justification that it is recommended and the Board recently had a discussion of this very problem of whether or not you propose to turn over to the local communities and counties the problem of flood-control protection or whether in this great valley it should be a major national problem.

Mr. VOGEL. It has on the major streams been handled exactly as a national problem, as you know. The things we are discussing here primarily are the smaller isolated communities off the main river, on small tributaries which flow to the main river. There are a number of examples I could give you on that, but the purpose has been to give such encouragement as is possible and to point the way to what the potential dangers and hazards are; to indicate what steps the cities themselves may accomplish in order to make their plans in such a way that these hazards will not actually develop.

Mr. EVINS. That is all at this point, Mr. Chairman.

Mr. WAGNER. Mr. Chairman, there are in the Tennessee Valley, as in other areas, a great many small communities that have flooding problems. Many of them are flooding problems from small streams. In a great many cases, if you investigate the possibility of providing construction which would eliminate the flood damage, you find that it is not economically justified. Now, a major purpose of these local flood studies is to provide those cities with information as to how high floods might come, what areas might be flooded, to give them such records as we have available from the past which they may not be aware of, and the cities themselves can then size up the problem.

As I have said, in most cases construction works by any agency are not economically justified, but if a city has an area within its limits which is subject to flood it can pass a zoning ordinance which would prevent the construction of high-value properties in that area, and so you avoid flood damage for the future.

The city of Pulaski, for instance, on the basis of a study we made for them, has passed such an ordinance. The city of Cleveland, Tenn., used this information in locating a new public school. The city of Lewisburg had a proposed subdivision in which some 20 houses were going to be built; our information indicated that a flood that occurred in March 1955 would have flooded them. That is the general use which is made of most of these flood studies, and the increase which you mentioned, Mr. Chairman, is to provide for an acceleration of that program.

FLOOD CRESTS AT CAIRO, ILL.

Mr. RABAUT. I note that you say regulation afforded by the Tennessee River system can reduce flood crests at Cairo, Ill., by from 2 to 4 feet. Last year you used these figures but for fiscal 1953 it was from 2 to 3½ feet. Has this half-foot increase in the effectiveness of your system been attributable to increased reservoir capacity and what was the date when the new effectiveness figure was established?

Mr. VOGEL. I think I better ask Mr. Blee to give you the figures upon which that was based.

Mr. BLEE. I am not familiar with the details of the change, but it comes from further study because we have not added storage capacity in this interval. We have been studying the floods in cooperation with the Corps of Engineers to arrive at these figures of the possible benefits and, of course, it varies with the type of flood.

Mr. RABAUT. The recent figure is 2 to 4 feet. The previous figure was 2 to 3½. You have only studied it to arrive at a new figure; is that the answer?

Mr. BLEE. Yes, it is the result of further investigation and studies which are very complicated studies.

Mr. WAGNER. Those studies, Mr. Rabaut, show ways in which the operation of the system can be improved to provide greater benefits. As we get more experience operating the system, we find how to operate it better.

POWER OPERATIONS

Mr. RABAUT. Let us now take up power operations. We will insert in the record pages 52 to 56, inclusive.

(Information referred to follows:)

TENNESSEE VALLEY AUTHORITY

SCHEDULE B–1. *Power operations (for fiscal years ending June 30, 1955, 1956, and 1957)*

	1955 actual	1956 estimate	1957 estimate
Income:			
Operating revenues:			
Sales of electric energy:			
Municipalities and cooperatives	$58,204,157	$66,900,000	$74,930,000
Commercial and industrial	23,555,417	27,530,000	32,750,000
Federal agencies	102,962,859	123,760,000	121,150,000
Electric utilities	145,070	140,000	150,000
Total outside sales	184,867,503	218,330,000	228,980,000
Rents and other revenues	644,728	655,000	684,000
Total operating revenues, exclusive of interdivisional sales and rents	185,512,231	218,985,000	229,664,000
Incidental income from recovery of operating expenses:			
Interchange power delivered	10,850	579,000	1,520,000
Sales promotion	131,397	131,000	131,000
Other	214,817	236,000	235,000
Subtotal	357,064	946,000	1,886,000
Interest from long-term receivables	11,050		
Total incidental income (note 1)	368,114	946,000	1,886,000
Total income	185,880,345	219,931,000	231,550,000
Expenses:			
Production:			
Generation	76,647,602	102,459,000	110,744,000
Purchased power	5,394,947	397,000	
Interchange power received	7,857,987	617,000	
Total production expense	89,900,536	103,473,000	110,744,000
Transmission	7,836,586	8,094,000	8,091,000
Customers' accounting and collecting	143,278	158,000	167,000
Sales promotion	658,285	704,000	717,000
Payments in lieu of taxes	3,878,466	4,152,000	4,786,000
General operating expense	5,049,844	5,364,000	5,597,000
Interest on funded debt	398,437	43,000	
Other expense	256,079	135,000	149,000
Total operating and interest expense	108,121,511	122,123,000	130,251,000
Less interdivisional sales and rents (note 2)	2,650,758	2,570,000	2,410,000
Total direct expenses	105,470,753	119,553,000	127,841,000
Distribution of administrative and general expenses (schedule B–5)	1,243,149	1,375,000	1,500,000
Total	106,713,902	120,928,000	129,341,000
Allocated from multipurpose reservoir operations	1,560,547	1,497,000	1,639,000
Total expenses before depreciation	108,274,449	122,425,000	130,980,000
Depreciation on power facilities	28,856,359	37,337,000	41,000,000
Depreciation allocated from multipurpose reservoir operations	1,236,259	1,240,000	1,240,000
Total expenses	138,367,067	161,002,000	173,220,000
Net income from power operations	47,513,278	58,929,000	58,330,000

NOTE.—In accordance with the uniform system of accounts prescribed by the Federal Power Commission, TVA's published financial statements reflect these items as follows:

1. Incidental income is deducted from the appropriate operating expense.
2. Interdivisional sales and rents are included in operating revenues.

These departures are made herein for clarity of presentation for budgetary purposes.

Power Operations (Schedule B–1)

No increase in generating capacity is scheduled for completion by TVA in fiscal year 1957. However, a small increase in system capacity will result from the installation of two units at the Old Hickory project of the Department of the Army on the Cumberland River, and the first unit at the Chilhowee project of the Aluminum Company of America. The total system nameplate capacity with these units will be 9,931,151 kilowatts.

The total energy supplied to the system from these facilities is estimated to be 61.8 billion kilowatt-hours in fiscal year 1957, about 1½ times the energy supplied to the system in fiscal year 1955, and about 4 billion kilowatt-hours above the estimated supply in fiscal year 1956. The disposition of the energy is expected to be as follows:

	Billion kilowatt-hours
Sales, including interdivisional	57.28
Interchange deliveries to other systems	.66
Deliveries to ALCOA under Fontana agreement	1.90
Transmission losses	1.98
Total	61.82

The net income from power operations after depreciation for fiscal year 1957 is estimated to be $58,330,000, representing a return on the average net investment in the power program during fiscal year 1957 of about 3¾ percent. The estimates assume average streamflow conditions for the remainder of the current fiscal year and during all of fiscal year 1957. Better than average streamflows could produce some increases in net income over the estimates. Under significantly subnormal streamflows, such as were experienced in fiscal years 1953 and 1954, the net income would be sharply reduced by increases in production expense.

POWER REVENUES

Sales of electric energy, exclusive of interdivisional deliveries, are expected to increase in fiscal year 1957 to about 56.6 billion kilowatt-hours, compared with the estimate of approximately 53.3 billion kilowatt-hours in 1956 and the actual of 41.4 billion kilowatt-hours in 1955.

The forecast of energy requirements for fiscal year 1957 reflects the steadily increasing use of power in the homes, on the farms, and in the business and industrial establishments in the region. Power used by Federal agencies is expected to be 40 percent greater in fiscal year 1957 than in fiscal year 1955. The requirements of other users in fiscal year 1957 are estimated to be about one-third more than in fiscal year 1955.

Revenues from the sale of electric energy, exclusive of interdivisional sales, are expected to increase from the fiscal year 1955 actual of $184,867,503 to estimates of $218,330,000 in 1956 and $228,980,000 in 1957. The average price of power sold to Federal agencies will decrease as compared with 1955 and previous years since most of the requirements in fiscal year 1957 will be supplied at normal rates from TVA generating plants.

POWER EXPENSES

Assuming average streamflow conditions for fiscal year 1957 and the remainder of 1956, total direct power operating expenses, including interest, are estimated at $127,841,000 in fiscal year 1957 and $119,553,000 in fiscal year 1956, compared with the actual of $105,470,753 in 1955. Most of the increase is in production expense as more energy is obtained from the new steam units in supplying the increased requirements.

Variations in total production expense from year to year are detailed in the following breakdown of production expense totals.

	Actual, 1955		Estimated, 1956		Estimated, 1957	
	Billion kilowatt-hours	Thousands of dollars	Billion kilowatt-hours	Thousands of dollars	Billion kilowatt-hours	Thousands of dollars
Generation:						
Hydroelectric	13.72	$8,522	15.71	$8,548	16.05	$9,244
Steam electric	28.78	66,039	41.93	92,073	45.77	99,862
Other generation expense		2,087		1,838		1,638
Total generation	42.50	76,648	57.64	102,459	61.82	110,744
Purchased power	1.09	5,395	.13	397		
Interchange received	2.54	7,858	.18	617		
Total production expense	46.13	89,901	57.95	103,473	61.82	110,744

Of the total system input, the steam plants are expected to provide about 74 percent in fiscal year 1957, compared with the actual of 62 percent in 1955.

The above estimates of production expense are based on the energy actually in storage in the summer of 1955 and the assumption of average stream flows thereafter, with due consideration to the amounts of storage reserves which must be maintained to carry loads in subsequent periods. Great variations from the estimates for steam electric production and interchange transactions can result from changes in streamflow conditions or in power requirements. Variations can also result from changes in fuel costs, which account for about 80 percent of the direct steam generation costs shown above.

The increase from year to year in transmission expense and other costs reflects the requirements for operating and maintaining the growing power system needed to supply the expanding loads in the TVA power service area.

The estimates of payments in lieu of taxes are based on revenues from the sale of energy, exclusive of deliveries to Federal agencies, during the preceding fiscal year, in accordance with provisions of section 13 of the TVA Act as amended. The estimated payments for fiscal years 1957 and 1956 are each approximately 5 percent, as prescribed by law, of such revenues for the respective preceding years.

INCOME OVER EXPENSES

Mr. RABAUT. On page 52 your record reflects that your 1955 income from sales promotion was $131,397, which is very close to the estimate you made last year of $130,000. Last year your 1956 estimate was $130,000, which is very close to what you now estimate it will be and the 1957 figure will be. Last year, however, you estimated 1956 sales promotion as an expense item would be $676,000 and now you believe it will be $704,000. What accounts for this marked increase?

Mr. KAMPMEIER. Mr. Rabaut, I think a major contributing factor has been change in salary levels and in price levels. This expense item includes largely labor and materials, as a lot of these items do, and some of those costs have gone up. The scope of the program is not appreciably different. There has been probably some refinement of estimates, but no major change in scope.

Mr. RABAUT. You were quite correct on the income figure and you think you are just about as correct on the expense figure; is that right?

Mr. KAMPMEIER. We think it is a close estimate.

Mr. CANNON. May I ask a question off the record there?

(Discussion off the record.)

Mr. KAMPMEIER. Among other things Mr. Cannon, you asked whether there were years in which there was a temporary decrease in total power revenues.

In fiscal 1946, the year which included the last few months of World War II and the period immediately following the war, there

was a drop in total operating revenues, from $39 million in 1945 to $35 million in 1946. However, by the next year, 1947, the revenues jumped to $44 million. That is indicative of the upward trend which was broken only temporarily and very briefly in a situation like that. In 1950 there was a drop of less than 1 percent, from the $58 million the preceding year to $57,800,000 in 1950, and then the next year the revenues jumped to $70 million, again indicating the rapid upward trend that is taking place.

Mr. EVINS. One further question at this point, Mr. Chairman.

Mr. RABAUT. Yes.

Mr. EVINS. The general trend, as Mr. Cannon and others have indicated, is a net profit operation for each year. Would it not be expected that with the cutting down of expenses as these plants are completed, when you reduce expenses that the net profits would increase over the years forecast for the future?

Mr. KAMPMEIER. Our projections, Mr. Evins, indicate continually increasing net income.

Mr. EVINS. A very profitable operation, is it not? Please answer the question. The power-operation feature is a very profitable operating feature of the TVA system; is it not?

Mr. KAMPMEIER. Excuse me. I did not understand it as a question. We certainly do not intend our power operations to be primarily a profitmaking enterprise, but they are earning a net income well in excess of costs.

MULTIPURPOSE RESERVOIR OPERATIONS

Mr. RABAUT. Let us now turn to multipurpose reservoir operations and insert into the record pages 57 to 66, inclusive.

(Information referred to follows:)

TENNESSEE VALLEY AUTHORITY

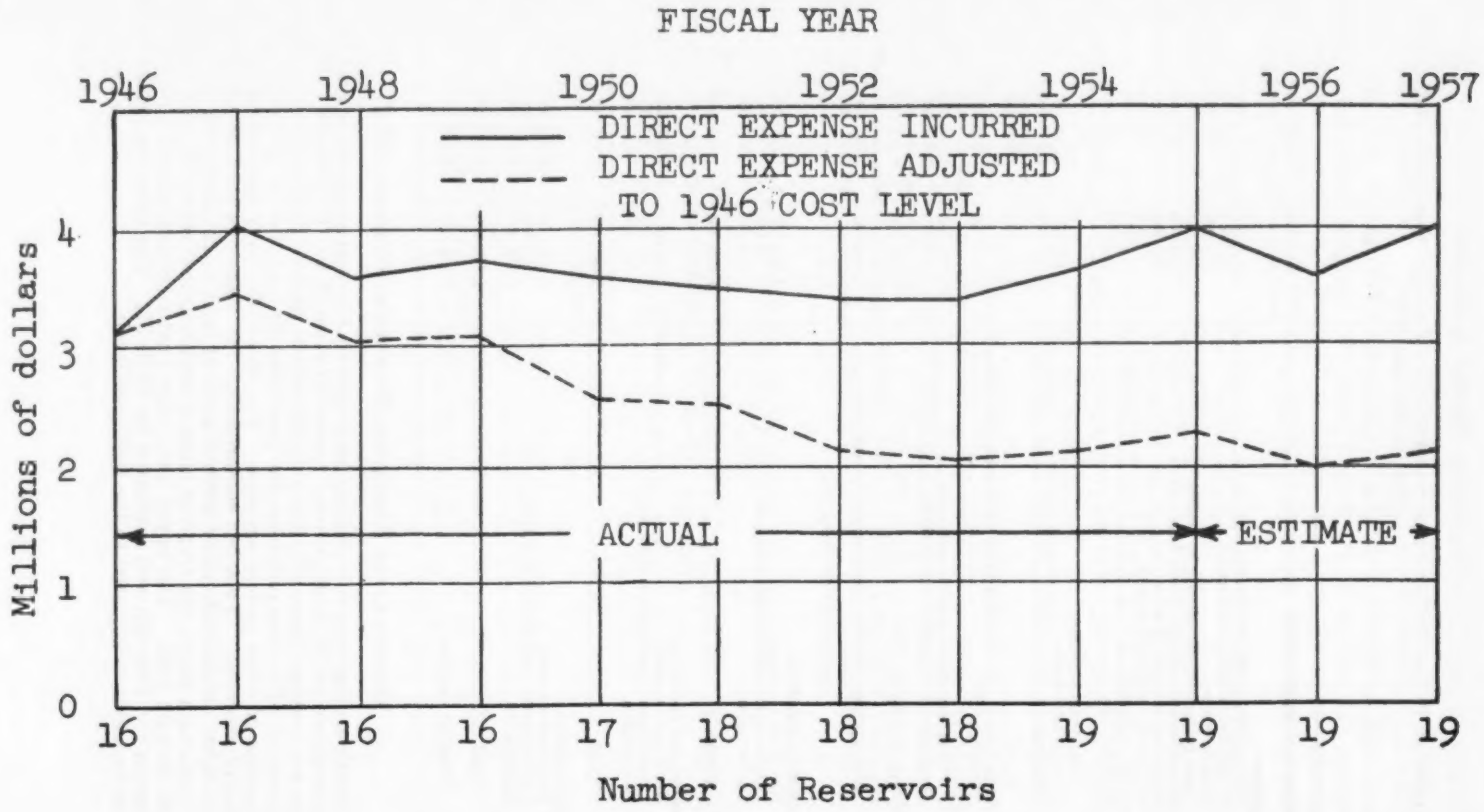
SCHEDULE B–2.—*Multipurpose reservoir operations (for fiscal years ending June 30, 1955, 1956, and 1957)*

	1955 actual	1956 estimate	1957 estimate
Income (incidental income)	$314,458	$270,000	$234,000
Expenses:			
Water-dispatching operations	558,577	575,000	591,000
Water-control investigations	222,674	244,000	271,000
Malaria control	460,295	420,000	449,000
Plant protection and services to visitors	988,513	981,000	1,040,000
Operation and upkeep of dam reservations	499,579	377,000	496,000
Operation of reservoir lands	808,342	748,000	792,000
System improvement studies	40,230	25,000	34,000
Other operations	80,275	20,000	23,000
Maintenance	283,230	335,000	317,000
Total direct expenses:			
Appropriated funds	2,170,690	2,066,000	2,260,000
Corporate funds	1,771,025	1,659,000	1,753,000
Total	3,941,715	3,725,000	4,013,000
Distribution of administrative and general expenses (schedule B-5)	259,952	270,000	300,000
Total expenses before depreciation	4,201,667	3,995,000	4,313,000
Depreciation on multiple-use facilities	2,943,473	2,950,000	2,950,000
Total expenses	7,145,140	6,945,000	7,263,000
Net expense o fmultipurpose reservoir operations	6,830,682	6,675,000	7,029,000
ALLOCATION TO PROGRAMS			
Navigation operations:			
Net direct expenses	1,079,680	1,026,000	1,124,000
Administrative and general expenses	77,986	81,000	90,000
Depreciation	794,738	796,000	796,000
Total	1,952,404	1,903,000	2,010,000
Flood-control operations:			
Net direct expenses	1,091,010	1,040,000	1,136,000
Administrative and general expenses	77,986	81,000	90,000
Depreciation	912,476	914,000	914,000
Total	2,081,472	2,035,000	2,140,000
Power operations:			
Net direct expenses	1,456,567	1,389,000	1,519,000
Administrative and general expenses	103,980	108,000	120,000
Depreciation	1,236,259	1,240,000	1,240,000
Total	2,796,806	2,737,000	2,879,000
Total net expenses	6,830,682	6,675,000	7,029,000

MULTIPURPOSE RESERVOIR OPERATIONS (SCHEDULE B–2)

Multipurpose reservoir operations relate to the management, operation, and maintenance of 19 multipurpose reservoirs created by TVA dams. The reservoirs are managed primarily for purposes of navigation, flood control, and power. Consistent with these purposes, the reservoirs also serve other interests including programs of other public agencies. The reservoirs have approximately 10,000 miles of shoreline. TVA has responsibility for managing land or administering land rights on approximately 406,000 acres of land surrounding the reservoirs.

This graph shows the trend in costs of multipurpose reservoir operations from 1946 through 1957. The upper line reflects actual direct annual expenses of the program for 1946–55; and estimates for 1956–57. The lower line reflects these same expenses as adjusted to the 1946 cost level:


FISCAL YEAR
1946
1948
1950
1952
1954
1956
1957
DIRECT EXPENSE INCURRED
DIRECT EXPENSE ADJUSTED
TO 1946 COST LEVEL
Millions of dollars
0
1
2
3
4
ACTUAL
ESTIMATE
16
16
16
16
17
18
18
18
19
19
19
19
Number of Reservoirs

Estimated direct expenses for multipurpose reservoir operations are $4,013,000 for 1957, compared to the 1956 estimate of $3,725,000. Income is estimated at $234,000 for 1957 and $270,000 for 1956. Of the total 1957 estimate of direct expenses, $1,753,000 will be financed from corporate funds and $2,260,000 from appropriated funds.

During the past several years, activities in this program have been reviewed carefully and a number of significant economies have been made. These savings, however, have been obscured by the general rise in salaries and other costs. In 1946, 16 multipurpose reservoirs were in operation. During 1956 and 1957, 19 will be in operation. Costs of many of the activities in this program are closely related to the number of reservoirs.

TVA's multipurpose reservoir operating costs are carried in a single-program category, although for accounting purposes they are distributed to the three primary programs—navigation, flood control, and power. The costs are distributed approximately 30 percent to navigation, 30 percent to flood control, and 40 percent to power. The navigation and flood-control portions are financed from appropriated funds, and the power portion from corporate funds.

WATER DISPATCHING OPERATIONS ($591,000)

The Tennessee is the world's largest controlled river system, It provides more than 14 million acre-feet of useful controlled storage, a 650-mile channel for 9-foot-draft navigation, and has installed hydroelectric generating capacity of about 3 million kilowatts. The system consists of 31 major projects, including 25 TVA-owned dams in the Tennessee Valley, 1 dam owned by TVA on a tributary of the Cumberland River, and 5 dams on the Little Tennessee River which are owned and operated by the Aluminum Company of America in accord with water-control instructions from TVA. All projects are operated according to instructions developed at TVA's central water-control office at Knoxville, Tenn. Suboffices for collection and analysis of data are located at appropriate points in the Tennessee Valley.

Efficient dispatching of water through the reservoir system to serve most effectively the major programs of navigation, flood control, and power, and at the same time serve other important interests in a manner consistent with the needs of these three major programs, requires continuous knowledge of the amount of water stored in each reservoir, the amount flowing in streams, the rain falling, and that likely to fall in the next few days on each watershed. Close cooperation with the United States Weather Bureau and the United States Geological Survey insures full use of all data and services available from these agencies, thereby avoiding duplication. Because a large number of gages are needed to determine accurately rainfall amounts and intensities throughout the area, TVA maintains a network of 377 conventional type rain gages and in addition utilizes, wherever feasible, 151 gages operated by the Weather Bureau and other agencies. Under a joint agreement, the United States Geological Survey furnishes data to TVA from 80 stream-gaging stations throughout the valley. The Weather Bureau by agreement with TVA furnishes daily and longer period forecasts of rainfall, operates an electronic flood-routing unit to aid in forecasting streamflows, and supplies TVA with forecasts of light intensities, humidities, temperatures, and other meteorological factors needed in system operation. Forty-one special-type gages (22 rain gages and 19 stream gages), developed and maintained by TVA, transmit stream heights and rainfall amounts from remote areas automatically by radio. All these data on rainfall, streamflow, and reservoir storage are assembled in a central office in Knoxville where the data are analyzed and plans are made for water-dispatching operations both currently and on a long-time basis. Instructions are transmitted through the power dispatching offices to the operators at each dam who operate the facilities that store or release water. A daily river bulletin, published cooperatively with the United States Weather Bureau, is distributed to persons and firms concerned with stream and reservoir elevations. Data are exchanged regularly with the Corps of Engineers in scheduling Tennessee Valley reservoir system outflow to provide maximum benefit to the Ohio and Mississippi Rivers during both low-flow and flood-flow periods. Gate settings at dams, charged to this activity, are performed as part-time tasks of personnel regularly employed at the dams.

WATER-CONTROL INVESTIGATIONS ($271,000)

This includes a variety of studies and investigations needed in connection with the operation of the multipurpose reservoir system. Owners of property adjacent to the reservoirs often claim that fluctuating water levels damage their farmlands or pollute their wells, and careful field engineering investigations must be made to determine the facts for use in possible litigation. Sediment in the reservoirs reduces storage capacity; field surveys are made on each reservoir at intervals of about 5 years to determine the storage lost. During 1957 field-sediment surveys will be made on several tributary reservoirs. In addition, office computations of sediment volumes will be made for reservoirs for which field surveys are being made in 1956. During periods of high streamflow, discharges over the spillways are compared with those predicted from model tests made before the dams were built for checking the propriety of design and indicating possible corrective measures for any adverse effects. These activities also include studies to determine the effects of impoundages and water-control practices on water quality and stream pollution and on fish and waterfowl.

MALARIA CONTROL ($449,000)

Control of malaria associated with TVA reservoirs requires repetitive control measures such as: plant-growth control by mechanical and chemical means; larvicidal spraying with DDT; field studies to detect the presence of malaria-carrying mosquitoes; appraisal of control methods; and development of improved techniques. Permanent shoreline improvements and fluctuation of water levels make it possible to keep the level of repetitive operations much lower than would otherwise be necessary. Repetitive control measures are limited to six main-river reservoirs, where conditions are most conducive to the breeding of malaria mosquitoes. Control measures on other reservoirs are not scheduled but are done as the need may arise. Program plans for 1957 on the 6 reservoirs include plant-growth control by mechanical and chemical means on 957 acres, maintenance of 137,650 linear feet of drainage ditches, application of larvicides by aircraft on 24,900 acres, and operation and maintenance of 10 dewatering areas involving 22,100 hours of pumping operations.

Malaria-control measures developed and applied by TVA have reduced the incidence of the disease to the point of virtual disappearance along the Tennessee River. A survey made in 1934 indicated that 30 percent of the people in certain areas along the Tennessee River in north Alabama had malaria. Surveillance last year in cooperation with the United States Public Health Service and State health agencies disclosed that the few cases discovered were all of Korean origin. Not a single case could be traced to the existence of impoundages of water in the Tennessee River. Even though malaria has practically disappeared along the Tennessee River, control measures must be continued and carefully appraised to avoid a recurrence of the disease.

PLANT PROTECTION AND SERVICES TO VISITORS ($1,040,000)

Under normal peacetime conditions this category includes visitor reception services at TVA multipurpose dams and guard service to protect the properties from damage of fire, theft, vandalism, etc. In the fall of 1950, TVA developed in coordination with defense agencies and put into effect a more intensive plan of protection. That plan costs substantially less than the one used during World War II. On the basis of security information current in 1952 and 1953, TVA reduced the protection standard in those years below the 1950 level. Thus, the manpower now assigned to protection of operating properties has been reduced to about the equivalent of that which prevailed prior to Korea. This personnel is so assigned, however, as to make property protection its major function through enforcement of Federal and State laws and project regulations with important subsidiary duties of receiving, protecting, and informing visitors. The 1957 estimate is based on continuation of present standards of protection, providing for the equivalent of 29.64 full-time posts at 17 dams (no posts are established at Chatuge or Nottely)—an average of 1.74 full-time posts per project.

OPERATION AND UPKEEP OF DAM RESERVATIONS ($496,000)

The 19 multipurpose dam reservations include 13,825 acres of land and 97 miles of gravel and hard-surface roads. A variety of operations is necessary for the upkeep of these roads and grounds. Roads, parking areas, and walkways are

maintained; the public-use areas around the dams are graded, planted, and mowed; signs and guardrails are painted and replaced as necessary; water supply, janitorial, and other services must be provided as required. Of the total dam reservation acreage, about one-half is in natural or forest cover; about one-fourth is maintained as meadow or pasture; and about one-fourth is maintained for intensive public use.

The 1957 estimate for these activities is $496,000, which is $119,000 above the estimate for 1956. Because of reductions in estimates, maintenance work on roads and grounds in 1956 will be less than normal. Some of the work originally planned for 1956 was done in 1955 and some of it was deferred to 1957. As a consequence, the 1957 estimate is increased over that for 1956 to cover essential maintenance work and to avoid excessive deterioration of road surfaces and unnecessarily higher costs in later years. The 1957 estimate is substantially the same as actual expenditures in 1955.

OPERATION OF RESERVOIR LANDS ($792,000)

As of June 30, 1955, TVA owned about 289,000 acres of land around the margins of the multipurpose reservoirs and held easement rights on an additional 117,000 acres above normal lake levels. These lands are used by a variety of individuals, agencies, and private groups for farming, grazing, parks, camps, boat docks, wildlife refuges, and other purposes. Continuous surveillance is necessary to assure that trespasses are controlled and that authorized uses do not conflict with the primary purposes of the reservoirs and are consistent with full public use of the reservoirs. Engineering investigations, surveys, and maps are made to maintain and preserve survey control markers; to install and maintain property boundary and maximum reservoir level markers; and to record changes in land ownership and physical developments on the land which are related to TVA's program responsibilities. The lands held by TVA are reviewed periodically in the light of changing program requirements; lands no longer necessary for program purposes are sold. Costs of delineating, surveying, mapping, selling, and related legal work incident to the disposal of surplus lands are included in this category.

The licensing of reservoir lands for agricultural purposes involves the public offering of available lands, establishment of minimum rental rates, review of applications, approval of rental rates, issuance of licenses, collection of rentals, and enforcement of license provisions. Approximately 1,500 licenses will be issued in 1957 for the use of about 35,000 acres for such purposes. Reservoir land operation includes provision of forest-fire protection and marketing of timber and other forest products through sales of stumpage. Approximately 10,500 cords of pulpwood and 3,500,000 board feet of timber are projected for sale in 1957 with a total estimated sales price of $91,000.

The 1957 estimate of income expected to be realized from operation of reservoir lands is $208,000. The corresponding 1956 estimate is $235,000. The decrease results from reduced income from land rentals and other fees, reflecting progress made in the disposal of surplus land. Estimates of income from sales of reservoir land are $326,000 in 1957 and $407,000 in 1956. This income is treated as a reduction in the investment in the reservoirs, and hence is not reflected in the estimates for the operation of reservoir lands.

SYSTEM IMPROVEMENT STUDIES ($34,000)

Continuing studies are necessary to improve the water control system in the Tennessee Valley by altering existing projects and by adding new projects. These activities include brief studies of existing projects to see how they might be improved in the light of operating experience to date; reconnaissance type investigations including geologic investigations of the undeveloped portions of tributary streams to locate dam sites worthy of more intensive study in developing the valley's water resources; maintenance of a current inventory of information on undeveloped dam sites including approximate data on type of development, foundation conditions, cost of development, and probable benefits; compilation and application of data for determination of the fundamental hydraulic features on which the planning, design, construction, and operation of the dams are based; and preparation and analysis of reports on special design features which will serve as references and aids for future design work. The 1957 estimate for this work is $34,000, compared to $25,000 for 1956. The increase is necessary to permit proceeding with important studies which have been unduly delayed because of reductions made in the 1956 estimate.

OTHER OPERATIONS ($23,000)

This category covers minor operating activities. The principal continuing activities are cleaning reflectors and replacing light bulbs along roadways at the 19 multipurpose projects and the determination of service lives of structures and equipment in order to fix proper depreciation rates.

MAINTENANCE ($317,000)

Maintenance activities consist mainly of painting spillway gates; maintaining spillway gate operating devices and other equipment items and structures at the multipurpose dams; and maintaining fills on relocated highways and railroads affected by adjacent water. Maintenance of certain earth fills is required under the terms of contracts entered into with the owners of the highways and railroads when TVA dams were built. Maintenance costs vary from project to project and from year to year. The estimate for 1957 of $317,000 is $18,000 less than that for 1956.

ECONOMIES

Mr. RABAUT. The chart on page 58 suggests you are operating the reservoirs more efficiently now than you did in 1947. You mentioned "significant economies"—that is a quote—as being responsible. How about spelling it out for the committee?

Mr. VOGEL. I think, again, Mr. Blee can give you the details. However, I would like to say that in general the reason for that is a growth of experience. The proper operation or the most efficient operation of any multipurpose reservoir is largely dependent upon the skill which results from a good many years of applying the principles so that all of the purposes can be served to their fullest.

Mr. Blee may be able to connect a bit more of that for you.

Mr. WAGNER. I think General Vogel has given you the basic reason. As you gain experience you increase your efficiency. For instance, malaria control operations are a rather expensive item in our reservoir operating program. As we have gained experience we have found new methods for controlling malarial mosquitos. We have improved the shoreline in some of the most troublesome areas so that the costs which we had previously had for dusting and for clearing weeds from the shorelines have been eliminated or greatly reduced.

In connection with the gathering of hydraulic and hydrologic data, we have been able to reduce the number of stream gages in some cases. We have found that some operations in this field which appeared initially to be necessary now could be dropped.

MALARIA CONTROL

To return to malaria control a moment, we conducted regular malaria control operations on some of our reservoirs in the early days, which as malaria receded in the valley we found did not require regular treatment.

The public safety service costs are included here and we have constantly worked on that item of expenditure, devised ways in which we could handle the program with fewer public safety officers. At some of the projects which have fewer visitors, the number of public safety officers who serve has been reduced.

Those are examples, Mr. Chairman. I could give you more details if you wish.

Mr. RABAUT. Off the record.

(Discussion off the record.)

Mr. EVINS. The funds in this budget for malaria control have been greatly reduced, have they not, based on past expenditures for this purpose?

Mr. VOGEL. Yes; on page 62, Mr. Evins.

Mr. EVINS. What is the situation?

Mr. VOGEL. There is $449,000.

Mr. WAGNER. That is right. That program costs $449,000, or is estimated to cost that in 1957. It is a program which at its peak was costing in the neighborhood of a million dollars a year. There are some areas, Mr. Evins, that still require treatment. If mosquito production reaches certain levels, we have to dust those areas to kill mosquito larvae. Also, some areas have to be dusted with herbicides. Control measures of that kind are still required. This budget covers those costs.

Mr. VOGEL. We are down to practically zero cases of malaria. This amounts to now holding our own and keeping it out of the area.

OTHER OPERATING ACTIVITIES

Mr. RABAUT. Your reasons for your classification "Other operations" is not entirely clear. Why is cleaning reflectors and replacing light bulbs not a maintenance operation? It is on page 66.

Mr. WAGNER. I am not sure I understand your question, Mr. Chairman, but these are activities, all of them required for the operation of the multiple-purpose dams and reservoirs.

Mr. RABAUT. Is that not maintenance?

Mr. WAGNER. I suppose you might call it maintenance.

Mr. RABAUT. Are they looking for extraordinary captions or what?

Mr. VOGEL. I think the answer is it does not come under any particular specific structure; that these are scattered along the roadways and are not picked up under dams or powerhouses or anything else.

Mr. RABAUT. At least you know we notice what is going on.

Mr. WAGNER. Our accountant tells us that is an accounting requirement.

Mr. RABAUT. What we have got in the Government is paper, that is certain.

FERTILIZER AND MUNITIONS DEVELOPMENT

Let us turn to the title "Fertilizer and munitions development," and insert into the record pages 67 through 85, inclusive, of the justifications.

(Information referred to follows:)

TENNESSEE VALLEY AUTHORITY

SCHEDULE B–3.—*Fertilizer and munitions development (for fiscal years ending June 30, 1955, 1956, and 1957)*

	1955 actual	1956 estimate	1957 estimate
Income:			
Sales of fertilizer:			
Federal agencies	$514,941	$1,565,000	$1,565,000
Cooperatives and other distributors	19,490,769	19,758,000	18,249,000
Total sales of fertilizer	20,005,710	21,323,000	19,814,000
Sales of byproducts and recovery of other production and distribution expense	274,676	425,000	425,000
Total income from fertilizer production and distribution	20,280,386	21,748,000	20,239,000
Income from partial payment plan	173,041	233,000	402,000
Other income	5,413	10,000	5,000
Total income	20,458,840	21,991,000	20,646,000
Expenses:			
Research on products and processes (appropriated funds)	1,289,096	1,238,000	1,238,000
Basic agronomic research (appropriated funds)	245,520	303,000	351,000
Production and distribution (corporate funds):			
Cost of products including depreciation	16,334,448	17,113,000	15,920,000
Other expenses	1,797,788	679,000	707,000
Gross cost of production and distribution	18,132,236	17,792,000	16,627,000
Less products transferred:			
Transferred to farm test-demonstrations below	517,525	511,000	823,000
Transferred to other TVA programs	33,786	31,000	50,000
Less depreciation included above	1,901,941	939,000	939,000
Total direct cost of production and distribution	15,678,984	16,311,000	14,815,000
Farm test-demonstrations:			
Planning and supervision (appropriated funds)	390,384	382,000	436,000
Fertilizer used:			
Appropriated funds	344,484	278,000	421,000
Corporate funds	173,041	233,000	402,000
Total farm test-demonstrations	907,909	893,000	1,259,000
Total direct expense:			
Appropriated funds	2,269,484	2,201,000	2,446,000
Corporate funds	15,852,025	16,544,000	15,217,000
Total	18,121,509	18,745,000	17,663,000
Distribution of administrative and general expenses (schedule B–5)	379,253	410,000	440,000
Total expenses before depreciation	18,500,762	19,155,000	18,103,000
Depreciation on chemical facilities	1,950,398	987,000	987,000
Total expenses	20,451,160	20,142,000	19,090,000
Net income from fertilizer and munitions development	7,680	1,849,000	1,556,000

FERTILIZER AND MUNITIONS DEVELOPMENT (SCHEDULE B–3)

The principal peacetime objectives of the TVA fertilizer program are to develop new and improved fertilizers and processes for their manufacture in order to lower their cost to the farmer and to test and demonstrate the value and best methods of fertilizer use. These objectives pertain to the Nation at large, but the activities are intensified in the Tennessee Valley and integrated with other regional development activities. The program includes fertilizer process research, testing of products under controlled conditions, experimental demonstration-scale production and distribution for improved fertilization practices, and farm test-demonstrations.

The TVA chemical research and production facilities are an important segment of the national defense program. During World War II, TVA supplied more than 60 percent of the elemental phosphorus used by our Armed Forces. It delivered for munitions production 30,000 tons of anhydrous ammonia, 10,000 tons of ammonium nitrate liquor, and 64,000 tons of ammonium nitrate crystal. For almost a year during the Korean hostilities TVA supplied the entire elemental phosphorus requirements of the Department of Defense.

TVA engineers and technicians aided the United States Army Chemical Corps in developing and constructing a plant at Muscle Shoals, Ala., for production of intermediate products used in the manufacture of nerve gas. At present TVA is applying its knowledge and experience in operating the plant for the Chemical Corps on a reimbursable basis. Phosphorus from TVA's chemical facilities is used in this plant. TVA has also conducted research at the request of AEC on the recovery of byproduct uranium from leached zone phosphate from Florida.

Cooperative relationships in fertilizer research are maintained with the United States Department of Agriculture. Regular meetings of TVA and USDA staff members are held to correlate the fertilizer research of the two agencies. Between meetings contact is maintained through correspondence and conferences. At present, a cooperative project is under way on the development of methods for producing high-analysis granular fertilizers. USDA is doing the laboratory work and TVA is conducting the pilot-plant research.

TVA's chemical research, production, and distribution operations are carried on as parts of a single overall program with the dual purpose of developing and using new and improved fertilizers and of providing materials and services essential to the national defense.

Appropriated fund expense in 1957 is estimated at $2,446,000. This covers the cost of research on products and processes, basic agronomic research, and the net cost of farm test-demonstrations. Corporate fund expense—primarily the cost of manufacturing and distributing fertilizer—is estimated at $15,217,000. Income, almost entirely from the sale of fertilizer, is estimated at $20,646,000. After provision for depreciation, $987,000; and distribution of administrative and general expenses, $440,000; total program expense is $19,090,000; and net income is $1,556,000.

RESEARCH ON FERTILIZER PRODUCTS AND PROCESSES ($1,238,000)

The TVA research and development facilities and staff are used in an integrated program of fertilizer and munitions development. To a very large extent the staff and facilities are used interchangeably on the two parts of the program. The value of this fertilizer-munitions integration for national defense, as provided in the TVA Act, was demonstrated in World War II and during the Korean conflict and is being used advantageously today.

New or improved fertilizer technology developed by TVA must be applied by private fertilizer producers if farmers are to benefit. Information on the results of TVA fertilizer studies is made available to industry through publications, correspondence, and visits by industry representatives to the TVA chemical plant. Through a joint technical committee TVA and the National Fertilizer Association have maintained regular contact for exchange of information on fertilizer process research, production, distribution, and use and for discussions of mutual problems. This cooperation has provided a means of keeping the fertilizer industry informed of TVA technological developments through periodic bulletins and through demonstrations. Over 300 people, representing 160 fertilizer manufacturers, distributors, and equipment manufacturers in 33 States, the District of Columbia, Puerto Rico, and Mexico, attended a demonstration of a process for continuous ammoniation of superphosphate and fertilizer mixtures at the TVA chemical plant in September 1953. In March 1955 in a demonstration of a new process developed by TVA in cooperation with AEC, 18 representatives of the chemical industry observed pilot-plant production of fertilizer from Florida leached zone phosphate ore.

American industry is receiving many benefits from TVA chemical research. By August 1955, 70 licenses, granting free use of TVA inventions, had been issued to commercial concerns. Of far greater value to industry is the availability to all of research findings, design data, and operating information.

Small-scale research

Small-scale research includes (1) observation, collection, and organization of facts to provide a foundation for subsequent research; (2) exploratory tests of proposed processes and techniques to determine whether the proposals warrant further research; and (3) applied research to devise new or improved products, processes, or techniques.

Long-term studies of th fundamental properties of calcium phosphates and associated compounds which have been in progress for several years will be continued during 1957. Calcium phosphates are the compounds generally used in producing commercial fertilizers. Studies of them yield valuable background

information which is published for permanent reference, from which ideas for new and improved processes are originated and evaluated in TVA's program of fertilizer research and development. The usefulness to industry of research on phosphate compounds extends to other fields beyond fertilizer and munitions development in which the chemistry of phosphorus is important, such as insecticides, detergents, and biochemical materials.

Much remains to be learned about the chemistry of phosphate in soil systems. Only a small part of the phosphate applied as fertilizer reaches the plant during the first growing season. A part is fixed by the soil in forms that are used by plants in later seasons, but most of the phosphate apparently is so fixed that plant use is resisted over periods of many years. TVA chemical research on phosphate fixation has attracted wide interest among soil scientists. Several laboratory studies now in progress will be continued in 1957 with the expectation that basic information obtained will facilitate the development of more effective fertilizers. Research on the recovery of byproduct fluorine from phosphate processing will be continued.

A limited amount of exploratory research on combination fertilizers will be continued. The possibility of producing a conventional "ammoniated superphosphate-muriate of potash" type of complete fertilizer by a more efficient continuous process, starting with phosphate rock, will also be investigated. Other exploratory research will concern new approaches to the production of liquid fertilizers, with particular reference to the suspensions of insoluble materials and problems of corrosion.

Process development

Process development consists of (1) technical and economic evaluation of small-scale research results; (2) development of the unit operations necessary to define a process and obtain data for a pilot plant; (3) design, construction, and operation of pilot plants; (4) improvement of design features and operating procedures of demonstration-scale plants; and (5) engineering and economic studies directed toward adoption of processes by private industry.

Work will be continued on the development of a process for utilizing calcium metaphosphate in the production of complete high-analysis fertilizers. Calcium metaphosphate contains about 62 percent plant nutrient and is an excellent fertilizer. However, methods have not been developed for combining calcium metaphosphate with ammonia for the production of mixed fertilizer or for producing in granular form mixtures containing calcium metaphosphate. The material is not soluble in water, which limits its applicability. Research work in progress is directed toward overcoming those disadvantages.

There is a great need for a potash fertilizer in a slowly soluble form for use in humid regions in order that the potash in one application of fertilizer may be available to growing plants over a long period. Work is underway for development of a process for production of a high-analysis potash-phosphate fertilizer that will be slowly soluble in water. Several promising compositions have been prepared in small-scale tests. A pilot plant will be constructed in the latter part of fiscal year 1956 and will be operated in 1957 to develop the process.

Studies carried out in a small pilot plant have shown that a fertilizer of very high plant nutrient content can be produced from the reaction of phosphorus, air, ammonia, and water. The product contains 90 percent plant food—17 percent nitrogen and 73 percent phosphate. A part of the nitrogen is in a form that dissolves slowly in water. This property will be particularly advantageous in areas of high precipitation where soluble plant food is leached from the soil early in the growing season. With a slowly soluble fertilizer it might not be necessary to apply fertilizer more than once during the year. Because of the high concentration of this product, handling and shipping costs would be less per unit of plant food than for most fertilizers. During 1957 a pilot plant will be operated for production of this material to develop the process further.

Other process-development work planned for fiscal year 1957 includes cooperative research with the United States Department of Agriculture on high-analysis fertilizers of improved physical properties. The National Fertilizer Association has been very much interested in this project, and several suggestions made by the association's technical committee have been incorporated in the study. Work will continue on a simple process of making an ammonium phosphate-nitrate fertilizer.

Emphasis will be given to studies of the recovery of waste nitrogen from nitric acid plant tail gases.

BASIC AGRONOMIC RESEARCH ($351,000)

One of the primary goals in TVA fertilizer research is to increase the concentration of nutrients in fertilizers and thereby to lower the unit cost of essential plant nutrients to the farmer through reduced handling and shipping costs. Pursuit of this objective by TVA chemists and chemical engineers has resulted in development, through laboratory and pilot-plant stages, of a variety of potentially useful fertilizer materials such as calcium metaphosphate, nitric phosphates, diammonium phosphate, and high-alumina phosphate. Before undertaking demonstration-scale operations or education phases of the fertilizer program, such new materials must be tested on different soils to determine their availability for different crops. TVA's program of basic agronomic research is national in scope and is conducted in cooperation with State experiment stations in areas representative of the country's major soil types.

Recognition of the need for placing increased emphasis on the basic aspects of fertilizer evaluation has led to establishment of agronomic-research facilities at Wilson Dam, where the chemical engineering research and development work is conducted. This presents a unique opportunity for agronomists to collaborate with personnel in fertilizer research and development. Such cooperative effort, involving the use of common research facilities, stimulates progress not only in fertilizer evaluation but also in production of new fertilizers. Research on the interrelations of fertilizers, soils, and crops provides information essential to directing the course of chemical development.

The behavior of various materials is assessed through studies conducted under controlled laboratory conditions. Here the objective is to determine the manner in which different materials undergo reaction with the soil, and to study the variable soil and environmental factors which influence soil-fertilizer reactions. Such an approach, coupled with field-plot investigations, has as its ultimate goal the determination of sound bases for predicting fertilizer behavior and fertilizer-use practices which will give best crop response under a wide variety of soil conditions.

The search for new types of fertilizer materials frequently results in the production of compounds and formulations which are quite unlike such well-known materials as superphosphate, muriate of potash, or ammonium nitrate. As a result, accepted practices relating to use of conventional materials may not be applicable. This has been demonstrated in TVA evaluation studies. Research has indicated, for example, that method of placement in the soil, time or frequency of application, particle size, or combinations of these and other factors which result in most efficient use of superphosphate may not be most effective for a material possessing different chemical properties.

Under different soil conditions, optimum rates of fertilizer applications vary for a particular nutrient or combination of nutrients employed. Determination of optimum fertilizer usage centers around well-conducted field experiments as well as the economic interpretation of agronomic research. Comprehensive experiments involving several rates of application and various nutrient combinations are needed to provide a sound basis for economic interpretation. A number of such studies now under way should pave the way for improving methods of making fertilizer recommendations to farmers.

The 1957 estimate for basic agronomic research is $351,000. This estimate includes funds for operation of the fertilizer-soils research laboratories at Wilson Dam, to be completed in 1956. In these laboratories, research is conducted on soil-fertilizer reactions of new materials under study by TVA chemists and chemical engineers. The laboratory facilities are used also as a means of initially evaluating and screening the different types of chemical compounds produced at Wilson Dam which offer promise as fertilizer materials.

Besides direct TVA activities, this estimate covers contractual work with 15 State agricultural experiment stations. The experiment stations engage in fundamental research on problems related to the most efficient use of fertilizer materials on specific plants and in specific soils. Research work will be performed in cooperation with agronomists and economists at Iowa State College, Michigan State University, Virginia Polytechnic Institute, and North Carolina State College under contract to relate the agronomic and economic problems of fertilizer use in order to find answers to questions relating to the optimum use of fertilizers.

Fertilizer production and distribution ($14,815,000)

TVA builds and operates demonstration-scale manufacturing units (1) to demonstrate the technical and commercial feasibility of new or improved fertilizer processes and to encourage their adoption by industry; (2) to supply fer-

tilizers for test demonstrations on practical farms; (3) to produce new fertilizers in quantities sufficient for widespread educational introduction to farmers; (4) to produce fertilizers needed to aid im improving the efficiency of fertilizer use; and (5) to supply munitions material or render other services for national defense.

Estimated direct obligations for fertilizer production and distribution are $14,815,000 for 1957, compared to the 1956 estimate of $16,311,000. Income is estimated at $20,239,000 for 1957 and $21,748,000 for 1956.

Fertilizer produced by TVA is used in farm test demonstrations, discussed on page 82, or is distributed through an educational sales program for selected uses. TVA fertilizer used in the educational sales program is sold through some 75 wholesale distributors, both industry and cooperative. The distributors agree to limit sales to the special uses developed in the respective States in cooperation with the land-grant colleges.

The objectives of this educational sales program are to obtain farmer acceptance of improved fertilizer practices, to aid in lowering the cost of plant nutrients to farmers, and to increase the farmer's knowledge of the more efficient new uses which will increase the demand for fertilizers. In each State the new and improved uses are selected by representatives of the land-grant colleges, the USDA, and the TVA distributors subject to final review and approval by TVA. In some States the program includes use of TVA fertilizer materials in the manufacture of more economical high-analysis mixed fertilizers aimed at reducing the cost of plant nutrients to farmers. The TVA fertilizers are made available in sufficient quantity to demonstrate the recommended fertilization practices or systems. Selected-use programs have been established in 35 States. Through reports submitted by the distributors and staff contacts with the distributors, TVA obtains information on distribution costs, the results of educational activities, farmer acceptance of new products, and farmer preferences as to kinds or conditions of materials. This information is of value to TVA in evaluating its fertilizer research and development work and in planning future program objectives. It helps distributors to develop fertilizer markets for new fertilizer products.

TVA production of fertilizer amounts to only 2 percent of the fertilizer tonnage used in this country and about 3 percent of the plant-nutrient content. This small amount of fertilizer is so widely distributed that it is not important as a general source of supply. Its significance lies in its use in educational programs and in the effect of those programs on fertilization practices and fertilizer demand.

The 1957 estimates of distribution, costs, and prices of the four fertilizers to be produced on a demonstration scale are summarized on the following page. Costs are for material in bags and include provision for depreciation. Prices are the rates per ton of bagged material, f. o. b. plant, to wholesale cooperative and industrial distributors.

This table shows the 1957 estimates of distribution—by tons of material, unit costs, and prices—of the four fertilizers to be produced in demonstration-scale plants.

	Concentrated superphosphate	Calcium metaphosphate	Ammonium nitrate fertilizer	Diammonium phosphate fertilizer
Plant food content (percent)	48	61	33.5	74
Distribution, total tons	20,000	80,000	180,000	20,000
Sales to Federal agencies	100		1,000	
Sales to distributors	19,850	70,150	173,790	16,820
Sales to test-demonstration farmers [1]		500	5,000	
Used in farm test-demonstrations		8,892		3,000
Used in other TVA programs [2]	50	458	210	180
Price to wholesale distributors, per ton material	$50.59	$63.01	$61.52	$110.49
Cost of production, per ton material	$52.32	$68.93	$32.00	$86.00
Cost of production, per ton plant food	$109.00	$113.00	$95.52	$116.21

[1] Test-demonstration farmers may purchase limited amounts of TVA fertilizers at full wholesale prices to supplement that received under the partial payment plan.

[2] Agricultural resource development, tributary watershed development, etc.

The fertilizer estimates above reflect plans to sell part of the chemical plant output in the form of intermediate products. Phosphorus will be sold to other Federal agencies for defense use. Nitric acid will be sold to Associated Cooperatives, Inc., Sheffield, Ala., to be used in producing nitric-phosphate fertilizer by a process developed by TVA. TVA has agreed to supply this intermediate material on a temporary basis until such time as Associated Cooperatives, Inc., can establish an independent source of supply. Associated Cooperatives, Inc., will supply TVA with technical and economic information on plant-scale operation of the nitric-phosphate process and will permit TVA to disseminate this information in the same manner as for its own facilities and processes.

Concentrated superphosphate

When TVA began the production of concentrated superphosphate in 1935 there were only five small producers in the Nation. TVA's experimental production and demonstration of this material helped to create a demand which has resulted in steady industry expansion. Now there are 15 plants producing concentrated superphosphate, which is an important source of plant nutrient. Its use has aided greatly in increasing the average analysis of fertilizers and consequently is lowering the cost of fertilizer to farmers in many areas.

TVA production of concentrated superphosphate has been reduced as program objectives have been attained. Practically all of the 20,000 tons to be distributed in 1957 will be used in the educational sales program.

Calcium metaphosphate

Calcium metaphosphate, a product developed by TVA, is the most concentrated phosphate fertilizer on the market and because of its concentration can be bagged, shipped, and handled at a lower cost per ton of P_2O_5 than any other phosphate fertilizer. It is particularly suitable for use in the rapidly growing middle western fertilizer market area.

An improved furnace used in the manufacture of this material is functioning well, and the many improvements that are being inaugurated should make the process more attractive to industry. As was noted on page 72, a study of methods for using calcium metaphosphate in high-analysis mixtures is under way.

From an agronomic standpoint, calcium metaphosphate is effective on acid and neutral soils. More data are needed on its suitability for use with a variety of crops and for its effectiveness on alkaline soils. This material will continue to be used in agronomic tests, farm test demonstrations, and the educational sales program. These programs will require 80,000 tons of material in 1957.

Ammonium nitrate fertilizer

During World War II, TVA produced ammonium nitrate liquor and crystals for munitions uses. When military demands for this product had been satisfied, TVA began to produce ammonium nitrate fertilizer and to conduct research and demonstration in cooperation with the USDA and industry to promote its use. At that time the use of ammonium nitrate as a fertilizer was almost unknown to United States farmers and there were only three producers. Ammonium nitrate is now the most important and most economical solid nitrogen fertilizer material available.

TVA produces ammonium nitrate fertilizer in a demonstration-scale unit using a continuous vacuum crystallization process. This safer and more economical process is the result of research and development work by TVA.

The estimated 1957 production of 180,000 tons is about 5 percent below the 1955 level. Most of the material will be distributed through the educational sales program for selected use. Some intermediate ammonia is now being used in the production of diammonium phosphate. As additional new processes or process improvements for making fertilizers requiring nitrogen are developed by TVA, intermediate materials now used in the manufacture of ammonium nitrate will be diverted to the new processes.

Diammonium phosphate

In 1957 it is contemplated that about 20,000 tons of diammonium phosphate will be produced by a TVA-developed process. This compares with a potential market for commercial production of several hundred thousand tons a year. At present only very limited quantities of diammonium phosphate are marketed in this country for fertilizer use.

Diammonium phosphate is a highly concentrated nitrogen-phosphate fertilizer, homogeneous and readily soluble in water. It contains 21 percent nitrogen and 53 percent P_2O_5. A ton of it contains almost as much plant nutrient as 3 tons of

a mixed fertilizer of the average analysis now used by farmers. Operation of the TVA unit, using some intermediate materials and equipment previously used in making other products, will contribute to reducing fertilizer cost to the farmer. It will provide materials for demonstrating this high-analysis material with its inherent economies in freight and handling costs.

Diammonium phosphate appears particularly suited for distribution in areas where a fertilizer of high water solubility is important and where potash as a fertilizer component is not required. Great expansion of facilities for making the raw materials for diammonium phosphate has taken place in recent years. This factor, with favorable production costs, should encourage industry to undertake production of the fertilizer in quantity following a successful introduction program. The TVA process provides a timely solution to the problem confronting many industry firms producing byproduct ammonium sulfate on which the economic return is declining. They can readily convert their facilities to make this highly concentrated combination fertilizer.

FARM TEST DEMONSTRATIONS ($1,259,000)

This table shows appropriated fund requirements for farm test demonstrations for fiscal years 1956 and 1957:

	1956	1957
Fertilizer	$511,000	$823,000
Less farmer payments for fertilizer (corporate funds)	233,000	402,000
Net cost of fertilizer	278,000	421,000
Contractual payments	227,000	274,000
Other costs	155,000	162,000
Net expense (appropriated funds)	660,000	857,000

TVA, the land-grant colleges, and farm families have worked together since 1935 in a cooperative test-demonstration program, the major objectives of which are (1) introduction to farmers of TVA's experimental fertilizers and testing and demonstration of their use in various farming systems; and (2) development of improved fertilization systems and demonstration of their feasibility under practical farm conditions. Another objective related specifically to the valley is agricultural development through improved use of fertilizers and other resources available to farmers in the operation of their farms. Experience on test-demonstation farms is being used to help identify important agricultural problems facing valley farmers and in suggesting ways to meet these problems.

Farm test demonstrations bridge the gap between the testing of new fertilizers under controlled conditions by experiment stations and the widespread introduction and sale of fertilizers to farmers through the educational sales program. It is through the test-demonstration program that farmers and extension workers first become acquainted with new TVA fertilizers and their use in improved fertilizer practices. Introduction of new fertilizers by this method shortens the period between their initial development and their widespread acceptance.

Test-demonstration farms are selected to provide wide representation of soil types, farm size, types of farming, financial position of farmers, and suitability of the farm for educational use. Test-demonstration farms serve as community guides and focal points for educational tours and conferences. The farmers are local agricultural leaders. From records kept by the participating farmers, data are compiled for appraising the program, planning its future, and in preparing educational materials.

The test-demonstration program was conducted on 2,893 farms in 22 States in 1955, including 15 nonvalley States. By the end of fiscal year 1956 the participating nonvalley States will total 18. The number of active farms will be reduced to about 2,500 in 1956, the reduction being made in the number of valley farms. In fiscal year 1957 the number of nonvalley States will be increased to 24 and the total number of participating farms to 3,500, of which about one-third will be nonvalley farms.

In general, farmers participate in the program for a 5-year period. One-fourth of the valley test-demonstration farms—about 500 in 1957—may remain in the program for longer periods. The purpose of this group of farms is to demonstrate the long-term effects of improved fertilization in combination with other good

farming practices and to study typical problems facing the development of such farms over long periods and through varying economic conditions.

TVA experimental fertilizers are furnished to test-demonstration farmers under a partial payment plan. During 1957 the price to the farmer will average about 49 percent of the TVA wholesale price, f. o. b. the plant. The farmer also pays shipping and handling charges. In addition to the cost of TVA fertilizers, the farmers secure from commercial sources at full cost the other fertilizer and lime needed to supplement the TVA materials.

In 1957 an estimated 8,892 tons of calcium metaphosphate and 3,000 tons of diammonium phosphate will be used in farm test demonstrations. Two hundred tons of nitric phosphate will be purchased from Associated Cooperatives for distribution to test-demonstration farmers at cost to secure more information than is now available on its use and to promote balanced fartilizer programs on test-demonstration farms. Gross cost of fertilizer used in 1957 is estimated at $823,000, of which the farmer will pay $402,000.

Supervision and technical guidance in planning and conducting the program, including such matters as selecting and planning farms, is provided through the agricultural extension services of the State land-grant colleges, with part of the cost being financed by TVA. The colleges and TVA jointly provide overall direction of the program and conduct special economic analyses of results. In 1957, TVA will pay the participating institutions $274,000 as its share of the cost of supervising the test-demonstration program. The colleges' share of the cost, which is not reimbursed, will be about $700,000. Ten years ago, in the peak year of TVA expenditures for farm test demonstration, comparable TVA payments totaled $545,000 and college contributions amounted to $425,000.

Calcium metaphosphate and diammonium phosphate, the major products to be used in the test-demonstration program in 1957, present farm-use problems which stand in the way of their general acceptance.

There are three main problems associated with calcium metaphosphate. Crop response in certain situations is too slow for annual grazing crops and fast-growing vegetables. Crop response is not always satisfactory from surface applications for pasture and hay crops on acid soils in humid regions. In most of the western part of the country where calcium content of the soils is naturally high, calcium metaphosphate is not yet recommended generally. Agronomic research results from the use of this fertilizer have just reached the stage where enough information is known about its behavior to recommend limited use on these soils.

There are also problems associated with diammonium phosphate that can be solved only by its use on farms in an educational program. Its nutrient ratio—21 percent nitrogen to 53 percent phosphate—does not generally lend it to direct application as a single fertilizer. In most areas farmers must add supplementary nutrients to meet crop and soil fertility needs. The big question on the farm use of this fertilizer is how can it best be fitted into fertilization systems on representative farms under a wide range of conditions.

Mr. RABAUT. On page 69 you say that you have an integrated program of fertilizer and munitions development. What would be the effect upon the cost of this research if you were not concerned with munitions at all?

Mr. VOGEL. I think it would run pretty much the same thing. Actually, the two fields join so closely together, particularly in the field of nitrate and phosphorous research, that the two jobs are done practically for the cost of one.

I would like Mr. Young to comment a little further on that for you, Mr. Chairman.

Mr. RABAUT. All right, Mr. Young.

Mr. YOUNG. Nitrogen and phosphorous are very important both in fertilizer and in the manufacture of munitions. Many of the results of our work on fertilizers are applicable to munitions. This showed up during the Korean situation when we did considerable research work for the Chemical Corps, and it was our background of experience in phosphorous that equipped us to do that work.

Mr. RABAUT. Is it sort of dormant now, or are you real active in that field?

Mr. YOUNG. As far as research work is concerned, our present efforts are devoted to the fertilizer program. However, we are at the present time carrying on an operation for the Chemical Service.

(Discussion off the record.)

DISTRIBUTION OF FERTILIZER

Mr. RABAUT. You say that the fertilizer used in the education and sales program is sold through some 75 wholesale distributors who limit sales to special uses. What procedures do you have for following up to see that this is so? I mean these special uses.

Mr. VOGEL. It is a very difficult thing to police a program like that completely. Our people are, however, alert to the situation and make every effort possible without incurring large expense. As you can well imagine, if the thing did get materially out of control we would receive complaints immediately. We would then follow up those complaints and take such action as necessary to correct the situation.

Mr. RABAUT. Are you receiving any complaints at the present time?

Mr. WAGNER. Mr. Chairman, within the past couple of years we have received in the neighborhood of 30 complaints. We have investigated all of those and in rough summary about two-thirds of them were situations where the people involved did not understand what was expected of them and they were corrected. I think in three of the cases the distributor either was dropped or withdrew from the program because, when he understood it fully, he did not want to continue.

Mr. RABAUT. If any distributor is abusing this situation you get rid of him?

We had a long discussion about this the last time and we hope it is being improved.

Mr. VOGEL. We think it is pretty well controlled and we are always anxious to hear from anybody who thinks it is not being controlled.

Mr. RABAUT. I note that your price to wholesale distributors for diammonium phosphate increased from $91.50 per ton last year to $110.49 this year, whereas the increase in the other fertilizers has been very nominal. Is this attributable to the fact that you materially reduced your production or for some other reason?

Mr. VOGEL. Mr. Young.

Mr. YOUNG. I do not recall that figure. We have not increased the price of our diammonium phosphate.

Mr. RABAUT. Look at page 78. Phosphate fertilizer, diammonium phosphate fertilizer, $110.49.

Mr. YOUNG. That was the price last year.

Mr. RABAUT. We got a figure here of $91.50.

Mr. WAGNER. I believe I can explain that.

Mr. RABAUT. $91.50 on page 66 of last year's justification.

Mr. WAGNER. At the time the justification statement was prepared last year it was anticipated that the material would be sold at a price of $91.50. I think that during the hearings we corrected that figure. Further examination indicated that the price was lower than it should be and the price of $110.49 was the proper one.

(The following information was supplied later:)

The price to wholesale distributors for diammonium phosphate fertilizer was shown at $91.50 per ton in the budget justification document for 1956 as submitted to the Congress. This price was based on a schedule calling for the production of 43,000 tons of material. At the time of the hearing, TVA informed the committee that the production schedule had been revised downward to 20,000 tons and the price increased to $110.49 per ton (see sixth paragraph, p. 252, and third from last line, p. 253, House hearings on public works appropriations for 1956).

Mr. CANNON. Mr. Chairman, it might be said in this connection—and I was on the floor in 1917 when you first provided for construction of the first Muscle Shoals plant, that fertilizer was one of the prime objectives of the bill. The Muscle Shoals plant was established for two purposes: For the manufacture of munitions, gunpowder, in time of war, and the manufacture of fertilizer in time of peace. All the debate on the floor preceding the appropriation of the money was about those two purposes.

That was emphasized then and, of course, it is even more true today that by years and years of cultivation we were destroying the fertility of the soil or using up the fertility of the soil to a degree that made the use of fertilizer all over the United States in the production of practically every crop more and more imperative. In fact this plant at Muscle Shoals, which in time of peace should be used exclusively for manufacture of fertilizer, is contributing materially to the welfare of the farmer and the production of food and the prosperity of the Nation.

Mr. RABAUT. How does it happen that the ammonium nitrate costs remain fixed though all others have increased?

Mr. VOGEL. I think the point was made that actually we have not increased diammonium phosphate.

Mr. RABAUT. You have not. The cost of that remains fixed and the others have all increased. Superphosphates have gone up and calcium and metaphosphate has gone up and the ammonium nitrate has not.

Mr. YOUNG. Largely because of the cost of raw materials.

Mr. RABAUT. Do you not use any materials in the one that has not gone up? Why is that excepted from the cost factor?

Mr. YOUNG. When you change the rate of production, of course, that affects your cost. If you reduce your production as we have on superphosphate, the costs per unit go up. Ammonium nitrate production has remained pretty constant and therefore the cost has remained pretty constant. The natural gas which is a principal raw material for this product is purchased under a contract which has remained constant, so there has not been much change in costs.

INCREASE IN PRODUCTION OF FERTILIZERS

Mr. RABAUT. You refer to the production of concentrated superphosphate being reduced but your estimate of distribution this year is the same as last year. How do you explain that?

Mr. YOUNG. The production of superphosphate has been coming down from year to year. In fact at one time it was in the neighborhood of 150,000 tons a year, while production we anticipate in 1957 is about 20,000 tons. Tonnage figures are affected by the fact that super-

phosphate requires a curing period and is carried over in storage and the storage fluctuates.

Mr. RABAUT. Is it the storage you are carrying over that gives you distribution this year equal to last year?

Mr. YOUNG. Yes.

Mr. RABAUT. All right. What is responsible for your estimate of an increase of production of calcium metaphosphate from 72,000 tons to 80,000 tons?

Mr. YOUNG. Increase in calcium metaphosphate is due to the requirements of the program and to improvements made in the production facilities. We have been able, by making technological improvements, to gradually increase the production to the 80,000 tons shown.

And there is a heavy demand to try this fertilizer. Its use is expanding all the time. It contains the highest proportion of plant food of any phosphate fertilizer and it is a material that has an especially bright future for production in the western part of the country.

Mr. RABAUT. You mention that your 1957 estimate is 5 percent below that of 1955 for ammonium nitrate production. Why is your 1957 estimate 9 percent above your 1956 estimate?

Mr. YOUNG. We are providing storage facilities in 1957.

Mr. RABAUT. In other words, you say you are going downhill, but you are going uphill.

Mr. YOUNG. The movement of fertilizers tends to follow a seasonal pattern and during the shipping season you actually need more material than you currently make. In the past, we have had no storage facilities; we are now providing storage facilities so that we can make those shipments when the material is required. This accounts for that particular increase.

TEST-DEMONSTRATION FARMERS

Mr. RABAUT. I note that the test-demonstration farmers pay approximately 49 percent of the wholesale price for the fertilizer they use. Is there a waiting list of farmers who want to participate and how does one get in the program?

Mr. WAGNER. The test-demonstration farmers are selected by their neighbors to participate in the program. There generally is a considerable number of people who are willing and anxious to participate and those people then serve as leaders in their community in trying out not only new fertilizers and new uses of fertilizer, but improved farming methods as recommended by their county agent and as part of a general program for more efficient operation of farms.

Mr. RABAUT. Is there a waiting list of farmers who want to participate?

Mr. WAGNER. I do not know that we have a waiting list.

Mr. VOGEL. We would not have a waiting list, but we think there is always enough to meet the requirements. That would probably answer your question in the affirmative.

DISTRIBUTORS OF FERTILIZER

Mr. RABAUT. We see now how the farmers get into it. How do the dealers get into the program? Are they graduate farmers who become dealers?

Mr. WAGNER. No; the fertilizer is received by the test-demonstration farmers through distributors who normally handle our fertilizer. Sometimes they also handle the fertilizer educational sales program. In other cases, it is an organization of farmers who handle only test-demonstration fertilizer.

Mr. RABAUT. I said does the farmer become a distributor?

Mr. WAGNER. No; the farmer does not become a distributor.

Mr. RABAUT. Does he graduate into the position of a distributor?

Mr. WAGNER. No, sir.

Mr. RABAUT. How does the distributor get into the deal?

Mr. WAGNER. We have contracts with a number of distributors who handle our fertilizer.

Mr. RABAUT. I understand how they distribute it, but how do they get into the deal? Do you just go out and select them, or what?

Mr. WAGNER. Originally we had only farmer cooperatives as distributors. They entered into contracts with us. They were selected as the agencies best able to do the introductory job assigned to us in the TVA Act, which provides that we should work with the farmers' organizations.

A few years ago we added to that list of cooperative distributors some private industry firms. I think we have about 15 of them now. They were so selected as to give us a reasonable geographic coverage. They were also selected on the basis of their expressed interest in the program and willingness to participate in an educational program, and in some cases they had special features in their own operation which qualified them to do an exceptionally good job on this educational work.

We examine our list of distributors each year and, if there are areas where there is a demand for the educational sales material and it is not otherwise available and there is a distributor there who wants to distribute it, we enter into a contract with him. The number of distributors we can deal with, of course, is limited.

Mr. RABAUT. You said 15. Are these distributors associated otherwise in an allied business to this?

Mr. WAGNER. Most of the distributors sell other fertilizer material; yes, sir.

Our contracts are normally with major companies and they, in turn, have a number of dealers who actually sell the material to the farmer. These dealers normally sell other fertilizers, farm supplies, and related items.

Mr. RABAUT. That is what I wanted to know.

STATES PARTICIPATING IN TEST-DEMONSTRATION FARM PROGRAM

Mr. EVINS. Mr. Chairman, I think it should be pointed out there are 22 States that participated in the test-demonstration farm program in 1955 and 15 of those States were outside of the Tennessee Valley area. In 1957 it is anticipated that 24 States will participate in the program and more than one-third will be on farms outside of the Tennessee Valley area.

Mr. WAGNER. I believe the 24 States in 1957 are in addition to the 7 Tennessee Valley States. There will be a total of 31 States participating for 1957.

Mr. VOGEL. That is the reason for the increase mentioned in my opening statement—to bring in more States.

Mr. RABAUT. Has any attempt been made to see that this fertilizer gets into every State in the Union?

Mr. WAGNER. As General Vogel indicated, we are proposing to distribute it in additional States in 1957. Whether or not the fertilizer is available in any given State depends primarily on whether there is an interest on the part of the college there and the agricultural people of that State in having the fertilizer. There are some States in which the fertilizers we produce are not particularly suited to the soil types.

CONTRIBUTIONS OF TVA AND TWO COLLEGES IN JOINT TEST-DEMONSTRATION PROGRAM

Mr. EVINS. Again, Mr. Chairman, it is stated on page 75 of the justifications that research will be conducted in connection with the Michigan State University and the Iowa State College, as well as the Virginia Polytechnic Institute. I think it also should be pointed out that TVA's production of fertilizer amounts to less than 2 percent of the total national fertilizer tonnage; this amount should be considered negligible.

Mr. RABAUT. Now we have college participation in this program. You say that though you expect to pay the colleges who participate in the farm test demonstration $274,000, that their share of the expense will be about $700,000. Are you saying that over and above their normal operation, this program will cost them that amount, or that by allocating part of their salaries, their administrative expenses, and so forth, it would cost approximately that amount?

Will you give us a breakdown of how a sample college or two arrive at their estimates?

Mr. WAGNER. I do not think we have that information here. We will be glad to provide it for the record.

Mr. RABAUT. Suppose you supply it for the record.

(The matter referred to follows:)

Farm test demonstrations are conducted under contracts between TVA and the land-grant college of the participating State. The contribution of TVA and of the college is defined in semiannual budgets and annual work plans agreed upon under the contract. The college furnishes the services of experiment station and extension service personnel and pays for related travel, space, utility services, supplies, and the like. The college's share is determined on the basis of its estimates of personnel required and other costs of farm test-demonstration work. TVA pays part of the cost of conducting the program. TVA does not reimburse the college for any part of the cost of its general administration. The following examples are taken from the budgets agreed upon by TVA and 2 colleges, 1 in the valley, the other outside.

Fiscal 1956 contributions by TVA and 2 colleges for conduct of joint test-demonstration program

Mississippi State College:	
Agricultural Extension Service:	
Salary and travel, professional staff	$53,640
Salary, secretarial and clerical	5,980
Total, Agricultural Extension Service	59,620
Agricultural Experiment Station:	
Salary and travel, professional staff	4,360
Salary, secretarial, supplies, etc	2,200
Total, Agricultural Experiment Station	6,560
Total estimated contribution, Mississippi State College	66,180
TVA contract payment	5,000
University of Illinois:	
Salary and travel, professional staff	8,500
Stenographic, clerical, supplies, etc	1,000
Total estimated contribution, University of Illinois	9,500

TVA contract payment to University of Illinois: $240 to cover travel cost to annual conference.

Resource Development

Mr. Rabaut. Let us turn now to the problem of resources development and we will insert in the record pages 86 through 109 of the justifications.

(The matter referred to follows:)

Tennessee Valley Authority

Schedule B–4.—*Resource development (for fiscal years ending June 30, 1955, 1956, and 1957)*

	1955 actual	1956 estimate	1957 estimate
Income (incidental income)	$5,404	$9,000	$16,000
Expenses:			
Agricultural resource development	78,143	83,000	116,000
Forest resource development	434,271	475,000	520,000
Tributary watershed development	290,024	341,000	414,000
Topographic mapping	38,486	101,000	100,000
Total direct expenses:			
Appropriated funds	336,370	400,000	400,000
Corporate funds	504,554	600,000	750,000
Total	840,924	1,000,000	1,150,000
Distribution of administrative and general expenses (schedule B–5)	109,673	110,000	130,000
Total expenses before depreciation	950,597	1,110,000	1,280,000
Depreciation on general facilities	13,817	15,000	15,000
Total expenses	964,414	1,125,000	1,295,000
Net expense of resource development	959,010	1,116,000	1,279,000

Note.—In accord with the Independent Offices Appropriation Act, 1955, resource development was financed 40 percent from appropriated funds and 60 percent from corporate funds in fiscal year 1955. The 1956 estimates of 40 percent from appropriated funds and 60 percent from corporate funds are based on the method of financing used in the Public Works Appropriation Act, 1956. In the 1957 estimates the program is financed 35 percent from appropriated funds and 65 percent from corporate funds.

Resource Development (Schedule B–4)

The primary programs of the TVA, as described in the Tennessee Valley Authority Act of 1933, as amended, provide for the development of the Tennessee River for the benefits of navigation, flood control, and power, and for research in and development of chemical products for fertilizer or for use in the national defense. These major programs, while concerned with resource development, do not cover all the principal resources of the region to which the TVA must give attention if it is to fulfill its obligations with respect to their unified development. Beyond these primary programs are important areas of resource development related to, but not covered by, them.

One of TVA's major responsibilities is the proper use, conservation, and development of the region's land resources for watershed protection and improvement. Here TVA and State and local programs meet and join in cooperative activity. TVA's interest in soil and water conservation problems stimulates State and local participation and the assumption by State and local agencies of increasing responsibility for development of the region's resources.

For budget planning purposes, TVA includes certain related conservation and development activities in the category "Resource development." These activities include agricultural resource development beyond that concerned primarily with the use of chemical fertilizers, forest resource development, the development of tributary watersheds, and topographic mapping. In the first three of these fields TVA performs investigations to identify problems of resource conservation and development, conducts studies to develop and list corrective measures, and aids other agencies, both public and private, in applying solutions to regional and special problems. In the fourth field TVA, in cooperation with the United States Geological Survey, conducts a topographic mapping program to provide basic data essential to resource development in all fields.

A characteristic feature of these TVA activities related to the use of land resources is that they involve extensive cooperation with other agencies, both public and private, in cost-sharing projects. In this Federal-State-local partnership, TVA is not the heaviest contributor. Its expenditure is small in terms of dollars and great in the effect it has in stimulating State and local effort. For example, according to preliminary figures compiled from State sources, the 7 valley States spent about $55 million in State funds on resource programs in fiscal year 1954; TVA's net expense for that same year was $1,390,000. A second characteristic is the changing nature of these activities, both as to content or sponsorship. As other agencies are able to assume increasing responsibilities for leadership in special areas of resource development, TVA is free to withdraw from that particular activity and to direct its attention to the solution of problems in which other groups have shown little interest or ability.

The Independent Offices Appropriation Act for 1955 and the Public Works Appropriation Act for 1956 provided for financing 40 percent of resource development expenditures from appropriated funds and 60 percent from corporate funds. During fiscal year 1957 resource development expenditures will be financed about 35 percent from appropriations and 65 percent from corporate funds.

Actual obligations for resource development in fiscal year 1955 were $840,924. The 1956 estimate is $1 million, and for 1957 is $1,150,000.

Agricultural resource development

To encourage the full development and use of the agricultural resources of the Tennessee Valley consistent with sound conservation practices, TVA cooperates with State and local agencies, with farmer groups, and with farmers in agricultural research and demonstration projects. The character of individual projects changes as problems and conditions change. Generally, they relate to the identification of obstacles to better land use and to the development and demonstration of ways of preserving and enhancing land resources in the interest of improving the farm economy and of protecting the watershed. This educational work is related to but not included in the fertilizer and munitions development program described earlier.

During 1955 actual expense of agricultural resource development was $78,143. The 1956 estimate is $83,000. The estimate for 1957 is $116,000. It is estimated that the cooperating institutions will contribute an additional $75,000 to the cost of the activities described below.

Economic analyses of valley agriculture—$39,000

To plan an effective program of agricultural resource development and watershed protection, the TVA needs current data on the status and trends of valley agriculture and a basic knowledge of the conditions that have affected it. On the basis of such background information, remedial programs can be developed. Data obtained from other Federal agencies and from State and local sources are used extensively in TVA's economic analyses of valley agriculture.

During fiscal year 1957, continuing economic analyses were concerned primarily with keeping specific indicators in a current State, such as those relating to farm employment, farm income, and production costs and prices. These background studies are used in identifying significant changes in valley agriculture. Without such analyses it is impossible to determine whether proposed remedial measures meet current needs. About half of the 1957 estimate will cover the cost of providing these necessary benchmark data.

In addition to the continuing studies, TVA will make an analysis of the 1955 census of agriculture for the valley States and will initiate research on the causes of low farm income in the area in an effort to find a solution to this perennial problem. Studies will also be conducted to determine some of the reasons for the low income on valley farms and the factors which prevent many farmers from obtaining needed capital.

An example of the way in which demonstration projects are developed from economic analyses shows the place of such studies in the agricultural resource development program. During 1955 a study directed attention to the extent of off-farm employment of rural people in the valley. The study showed that one-third of the valley farm families received more income from nonfarm sources than from their farms. Almost one-half the valley farms are either part time or residential. Directed by these findings, TVA initiated a research project on part-time farming, which is described below.

Economic analyses of valley agriculture provided the data upon which the problems arising from the impact of industrial development of the region on its agriculture were brought to the attention of the valley agricultural colleges.

Agricultural development in problem areas—$41,000

During the first half of fiscal year 1952, agricultural leaders in Catoosa County became concerned about the low level of agricultural development in their county—compared with that of the region—and about the lack of coordination between the programs and activities of various groups and agencies working with farm people. They asked TVA and the University of Georgia to cooperate in a county development program involving Federal, State, and local agencies. The objectives of this program are to develop a satisfactory administrative pattern at the county level for the coordination of resource development activities of all agencies and organizations, and to improve the use of agricultural resources through an integrated approach to local resource-use problems.

TVA agreed to assist in this cooperative project primarily because of the opportunity it offered to develop, test, and demonstrate methods for conducting and coordinating resource development activities of all groups working in the area, utilizing maximum local initiative and support.

The primary tool for carrying out the program in Catoosa County is a local development board, composed of county officials, representatives of agricultural agencies, and representatives of various groups and civic bodies. This sponsoring group delegates program planning and promotional responsibilities to a central planning committee and seven other committees. A technical advisory committee composed of county extension workers, Soil Conservation Service technician, county forester, Agricultural Stabilization and Conservation Committee office manager, vocational education teachers, and Farmers' Home Administration supervisor provides guidance in specialized fields.

During 1957 TVA will furnish technical assistance, will provide 115 tons of fertilizer on a partial payment basis to about 50 test-demonstration farmers, and will supply 350,000 seedlings for reforestation on private lands. TVA will reimburse the University of Georgia, a cooperator in this project, for the salary and related expenses of an assistant county agricultural agent. Exclusive of TVA contractual funds, the university's 1957 budget for this project will be about $20,000. Contributions from other cooperating groups, while not known to TVA, are substantial.

During 1957 a similar cooperative demonstration will be conducted in a problem area in southwest Virginia if local initiative warrants. Local problems in that part of the State are not being adequately met by established programs of agen-

cies now serving these areas. This project will be conducted under contractual arrangements with the Virginia Polytechnic Institute. The contributions of the participating parties will be similar to those made in Catoosa County as a demonstration in southwest Virginia of the benefits to be derived from the coordination in a local area of the resource development activities of all participating groups.

Research on forage crops and animal industry

Beginning in fiscal year 1950 and ending in fiscal year 1956, TVA, in cooperation with the agricultural experiment stations of North Carolina, Georgia, and Alabama, studied and demonstrated the most promising methods of grassland-animal farming in the mountainous area of the valley. This research is significant as a means of helping farms in the hill country practice conservation agriculture while deriving an adequate income from the land. The studies already completed have stimulated State agencies to undertake similar work independently. TVA will conclude its participation in 1956, and no funds are requested for fiscal year 1957. The experiment stations will continue the research without further financial aid by TVA.

Soil survey—$8,000

In the Tennessee Valley, TVA, the United States Department of Agriculture, and the State experiment stations have cooperated in surveying the region's soils. TVA participation in this work extended from October 1, 1934, until early in calendar year 1954, when it withdrew. At that time 81 percent of the valley had been covered. The USDA and the States are continuing the survey.

TVA is now doing limited work in a project aimed at encouraging the wider use of the soil survey data already obtained. This work was begun in cooperation with the University of Tennessee in 1955. The purpose of this project is to explore and demonstrate methods of interpreting soil survey data and of using such analyses in determining the potential yield of various crops on different soils at different management levels. The development of these methods will permit the use of soil survey data, now of little meaning to farmers generally, in appraising soil potential and in using soil to best advantage. Only through wide use of soil survey data in this way can greatest return of the investment in it be assured.

During 1957 TVA plans to enlist the support of one agricultural college other than Tennessee in this cooperative project.

Part-time farming studies—$28,000

Part-time farming is increasing throughout the Nation. The 1940 census reported 15.5 percent of farmers worked off the farm for 100 days or more. By 1950 this percentage was 23.3. Studies of valley agriculture show a similar trend. Between 1940 and 1950 the percent of valley farmers who worked off the farm 100 days or more rose from 19.4 to 25.6 percent.

This is the consequence of the rapid industrialization of the area, which creates new markets for local labor and new sources of income for low-income farm families. The land which these families own or rent is an important resource which can contribute to the family income and in turn to the total income of the region. Of even greater significance is the relationship of the use of this land to watershed protection and improvement. Since the land of part-time farmers is interspersed among other farms, the full protection of the watershed can never be realized and may even be seriously handicapped if part-time farmers fail to do a good job of managing their land resources. Having their interests divided between nonfarm and farm work often makes this task difficult.

In cooperation with the University of Kentucky and the University of North Carolina, TVA is seeking to identify some of the problems of part-time farming and to develop and appraise educational methods whereby part-time farmers can be guided in applying solutions to these problems. This approach is necessary because traditional educational programs developed for full-time farmers are not reaching part-time farmers adequately.

It appears that if the part-time farmer is to use his land to his best economic advantage and for maximum watershed protection he must be helped to develop a profitable farming system, which requires a small number of hours of farm work and which emphasizes soil conservation practices. During 1957 primary attention will be centered on identifying basic problems and on evaluating educational methods applicable to part-time farmers.

This particular cooperative research was started in 1955 and will be concluded at the end of 5 years. Costs are shared by the cooperating institutions and TVA, with the colleges expected to put about $38,000 into the study in 1957.

FOREST RESOURCE DEVELOPMENT ($520,000)

There are about 14 million acres of forest land in the Tennessee Valley—54 percent of the watershed. The greater part of this land is in private ownership. These forests comprise one of the valley's major resources. With proper management they help to protect and enhance a Federal investment of some $800 million in a series of dam and reservoir projects built and operated for the benefits of navigation, flood control, and power. Tennessee Valley forest product values run to $400 million a year. The forest products industry employes 53,000 people full time with an annual payroll of close to $130 million.

TVA's interest in the woodlands of the valley centers around the twin needs of protecting the Tennessee watershed and of using the forest to the best economic advantage. The actual job of watershed protection and resource development, insofar as valley forests are concerned, rests primarily with the 245,000 private owners, who control 82 percent of the forest lands, and with the more than 6,000 valley industries which process and utilize forest products. These two groups, owners and users, determine forest land management practices, which in turn determine the quality of watershed protection and economic return from the resource. TVA works with owners and users in cooperation with State and local agencies.

Actual expenditures for forest resource development in 1955 were $434,271. The 1956 estimate is $475,000. The estimate for 1957 is $520,000.

Analysis of valley forests—$88,000

The collection and analysis of valleywide and local data on the extent, nature, growth, use, and condition of the forest resource and the type of management it is receiving is essential in developing and conducting TVA programs. Except as TVA provides it, precise local information of this character is not available.

During the fiscal year 1957 TVA will continue an inventory of the forest resources of the 125 valley counties by surveying 12 counties. Through 1955, field work on 28 counties had been completed and 8 more county surveys will be finished during 1956. It is expected that the entire valley will be inventoried at the average rate of 13 counties a year during the next 6½ years. Since 1952, 2 States and 2 major pulp and paper companies have helped in the surveys. The local data obtained are of great value to both conservation agencies and to the wood-using industry.

In 1957 TVA will make a survey and analysis to determine the number of jobs and types of work being handled by consulting foresters in the valley. A report will be published for general use to call attention to the availability of private consultants in the region and to explain the work they do. This should help forest owners and users obtain technical advice and assistance readily and should relieve the requirements for service by public agencies.

A new survey of reforestation needs in the Tennessee Valley will be made in 1957. During the 8 years since the last survey, reforestation programs have gone forward with State cooperation, at a rapid pace; forest-fire protection afforded by the States and counties has improved in many areas; and vastly increased markets for pine pulpwood are in existence. Because of this, landowner and agricultural worker attitudes regarding land use have changed markedly. There is also more general recognition that eroding hillsides should be reforested for watershed protection. In light of all these factors, an up-to-date estimate of reforestation requirements by counties is urgently needed.

A survey and analysis of citizen interest and participation in watershed protection and forest resource development will be made in 1957. A similar survey in 1949 revealed major shortcomings in the regional picture in the participation and activity of forest landowners and forest industries. Since then, TVA-State programs have been directed toward improving this situation. The planned resurvey after 8 years is necessary to measure the effectiveness of past programs and determine where future program emphasis should be placed.

Assistance in sustained forest productivity, $156,000

Development and maintenance of a full forest cover through proper management yields maximum economic returns to the landowner and at the same time provides the highest level of protection to the watershed. Under present management methods the valley forests are yielding about one-third of their economic potential and are giving the watershed less protection than is required. TVA conducts investigations aimed at increasing and improving forest production. Through cooperative demonstrations, practical methods of scientific forest manage-

ment are illustrated. TVA also collects and maintains up-to-date information on the forest-products industry and its requirements. State conservation departments participate in preparing for and conducting demonstrations of forest management.

During fiscal year 1957 primary attention will be devoted to three major forest management problems:

(*a*) Hardwood timber is growing faster than it is being harvested, and the quality of the hardwood stand is decreasing because high-grade trees are being cut and low-grade trees are being left to compete with more desirable trees for sunshine, soil, and water.

(*b*) Pine sawtimber is being cut faster than it is growing, a situation which jeopardizes the permanence of industries depending on the species.

(*c*) Many pine plantings made during the past 20 years are reaching usable size and must be brought under good systems of management if optimum return from them in dollars and watershed protection values is to be achieved.

Research on these problems in 1957 will be concerned in the main with experiments already underway. These experiments seek the answers to such questions as how best to convert low-grade hardwood stands to pine and how to get the best return from pine plantings and natural stands. These questions are particularly significant because of increased activity in the manufacture of newsprint in the valley.

During 1957 TVA will participate in 20 cooperative timber harvesting demonstrations and will complete arrangements for this type work to be continued in the future without TVA leadership. TVA foresters will encourage landowners owning a total of 40,000 acres of unmanaged forest land to make use of the long-term lease contract developed by TVA in instituting forest management on their holdings. TVA foresters will also conduct five technical subject seminars for consulting foresters, industrial foresters, State, and Federal foresters on new methods and techniques. Results of the 1955 survey of forest-management practices on individual ownerships will be used in 1957 for developing and testing new methods for getting more widespread adoption of good forest and watershed practices among the owners of small woodlands (under 100 acres). These small woodlands make up some 46 percent of the forest land in the valley and less than 10 percent of these lands is under satisfactory management for forest production or watershed protection.

Sound management of forest holdings and sustained production from forestlands involve an educational process centering around investigations and demonstrations. Since 1943, cooperative management demonstrations have been established in 28 large industrial- and investment-type holdings involving a half-million acres of forest land. In addition, 260 farm woodland management demonstrations covering over 20,000 acres of forests have been started. During the same period, 93 timber-harvesting demonstrations have been held, with an attendance of 6,700 persons. Evidence that this educational process is working is attested by the fact that owners of 540,000 acres of forest land in or adjacent to the valley have taken initial steps toward sustained-yield management in recent years. The bulk of this land was acquired during the past 10 years by forest-product industries and by investors for the sole purpose of timber production.

While this indicates progress on a program actively initiated in 1942, attainment of objective is still far distant. As of 1950 only 12 percent of the privately owned forest lands was under satisfactory management for forest production and watershed protection. If the forests of the valley in private ownerships deteriorate rather than improve to a point where they promote good watershed protection it is inevitable that conservation groups will make another demand for extensive and expensive public acquisition of forest lands.

Assistance in forest protection, $30,000

TVA's role in forest protection is to get basic facts; help establish standards adequate for watershed protection; evaluate current changes; stimulate State and local agencies, woodland owners, and timber operators to eliminate or reduce major forestry risks. This it does through cooperative research and demonstration projects. Application of specific preventive and corrective measures is the responsibility of the States, counties, and the public.

The estimate for fiscal year 1957 will provide for initiating a three-State fire-prevention program in the area where Alabama, Georgia, and Tennessee join. Watershed protection logging demonstrations will be conducted on the Norris municipal watershed and on large ownerships in the rugged plateau terrain of Cumberland and Morgan Counties, Tenn. A fire-prevention contract will be

initiated with the Mississippi Forestry Commission in the high fire incidence area of northeast Mississippi. Assistance will also be given to the valley States in extending organized protection to the 20 counties not now cooperating. Extension to four in 1957 and action in subsequent years should lead to all valley counties being organized by 1960. Arrangements will be made for more intensive use of grazing demonstration plots already established and the establishment of five additional ones. State divisions of forestry will be given assistance in using key fire danger stations, and, in cooperation with other Federal agencies, in making surveys of insect and disease outbreaks.

TVA contributions to forest protection have declined through the years as the extent and quality of organized protection by others have increased and as public interest has been demonstrated. In 1933 only half of the woodland in the valley had any kind of fire protection, and it inadequate. Forest ownership and development under such conditions was not a good business risk. Through cooperative surveys and demonstrations TVA has helped State and local agencies extend organized protection until it now extends over 105 of the 125 valley counties. The average annual burn has been greatly decreased but the number of fires has not, pointing to the need for fire-prevention work by State divisions of forestry and others.

Twenty years ago cattle grazed freely in the most heavily forested counties of the valley, doing incalculable damage to the woods. The educational work of TVA and other agencies brought about a steady decrease in the open range area of the valley. Practically no areas of open range now remain in the valley, but about 12 percent of the forest land is being damaged by grazing.

Logging in the hills and mountains of the Tennessee Valley is too often followed by erosion and consequent damage to the watershed because of poor design and location of roads and poor drainage and skidding methods. In cooperation with other agencies, TVA has conducted demonstrations of logging methods that are not destructive of watershed values.

Reforestation, $129,000

By the act of Congress creating it, TVA was directed to develop the best methods for reforestation and to aid in the control of erosion in the Tennessee Valley. One of its first major forestry activities was the establishment of nurseries to produce seedlings for planting on its reservoir lands, on other public lands, and on private lands. Corollary to this, TVA made surveys to determine the planting need in the valley for watershed protection and began to establish a cooperative pattern among State and local agencies and landowners for getting the planting job done.

Reforestation is a cooperative enterprise in the valley. TVA makes surveys to determine the broad needs for planting, provides leadership and program coordination, evaluates results, and produces part of the seedlings needed. State and county conservation agencies, civic bodies, banks, and forest-products industries cooperate in promotional work and in seedling distribution. Planting and protecting the seedlings is the landowner's job.

TVA seedlings production is limited to the output of one nursery. During 1957 this nursery will complete production of 19 million seedlings, of which 13 million will be used in valleywide reforestation, 3 million on tributary watershed projects, and 3 million will be transferred at cost to other agencies. Production will be started on 20 million seedlings, all for valley use. No more than 50,000 TVA-produced seedlings, enough to reforest about 50 acres, are supplied to any one landowner in 1 year. In 1957 it is estimated that TVA's total cost for every acre reforested will amount to about $7. Combined contribution of the State agencies and landowners will be about $15 an acre.

Limited work will be done on erosion control demonstrations, on tree improvement tests with species used in valley reforestation, and on the completion of forest tree crop tests.

Since the reforestation program in the valley began, over 35,000 landowners have planted trees on 240,000 acres, mostly in small ownerships. In 1955 a total of 4,163 landowners planted an average of 3,700 trees each. About 300,000 acres of eroding land in small tracts remains to be planted. Every effort is being directed toward having these areas planted in the next 10 to 12 years. According to a survey made in 1949, 1½ million acres of valley land was in need of planting.

This reforestation work has stabilized 240,000 acres of the most seriously eroded and idle land in the valley and has changed it from a liability to an asset, both in terms of watershed protection values and in terms of dollars. Fifteen-year-old plantations are already producing an economic return. For example,

TVA recently sold as pulpwood the thinnings from 8,000 acres of its reservoir land planted some 15 years ago for about $148,000, more than the estimated cost of the cooperative reforestation program for 1957.

Applying this value to other pine planted lands, there is $3,600,000 worth of pulpwood from thinnings now ready for cutting or that will be as each stand becomes 15 years old. That is more than the cost of TVA's reforestation work for the past 20 years. The residual stands will, when 45 years old, be worth more than $80 million at today's prices for sawlogs.

Assistance in timber processing and utilization, $117,000

In the final analysis, forest landowners and forest products industries—the grower and the user—determine forest land management practices. Since the quality of watershed protection is directly dependent on the quality of forest management, these two groups likewise determine the level of watershed protection afforded by valley forests. Work with the forest landowners has been described in the preceding section. Work with the forest products industries is described in this section. It relates in the main to investigations, demonstrations, and conferences involving the operators of small portable mills, some 4,000 of them. Together these independent operators produce 900 million board feet of lumber a year, 90 percent of the valley total. To a large extent they use methods and types of equipment that have changed little in 25 years. Few of them understand the relation of their present timber cutting practices to the future of the resource upon which they depend and over which they exercise so great a control.

During 1957 current information about timber cutting practices and logging methods used in the valley will be obtained. Studies designed to promote better utilization of some of the species not now being used to full advantage will be initiated. Early studies in this category will be directed at hickory. Other investigations will include a study and analysis of circular sawmills operations from the woods operation to marketing. Following this, adjustments would be made so that sound efficient operating methods could be installed. These mills would then serve as demonstrations of efficient operations to others. Wood preservation research conducted in cooperation with the Southern Wood Preservation Council will be continued through 1957 on a minimum basis in order to obtain payoff information from tests which have been established over the past 8 to 9 years. This work is concentrated on using small trees which should be removed to improve growth and quality of pine stands.

Developmental work to be done in 1957 will include 10 sawmill conferences with arrangements being made for increasing responsibilities to be carried by trade associations and State divisions of forestry. These conferences will bring sawmill operators, representatives of other forest products industries, and manufacturers of sawmill equipment together for discussions of improved mill practices. While TVA supplies much of the technical data presented, the greater share of the work and cost of holding them is borne by State and local agencies and by the lumber industry. TVA will assist in organizing and conducting conferences on management of small woodworking plants in southwest Virginia and western North Carolina. Assistance will be given in organizing additional local sawmillers' associations in 2 areas in Tennessee and 1 in Alabama. About five demonstration sawmills will be selected around which meetings can be held illustrating desirable management, utilization, and marketing practices. Assistance will be continued to area development associations, timber operator groups, and to local planning commissions in analyzing forest industry development opportunities.

TRIBUTARY WATERSHED DEVELOPMENT, ($414,000)

The tributary watershed activities of TVA are designed to help direct the efforts of State and local agencies in a local area approach to balanced resource development for the Tennessee River Basin. Effective conservation, control, and use of water resources call for soil and water programs along small tributaries as well as for works on major streams. Special area programs represent a method of increasing the effectiveness of basinwide programs such as forestry, agriculture, water control, and electric power by achieving local area improvement under State leadership and responsibility.

A number of small watersheds in the valley have been identified by TVA as having water problems which may retard local economic development. Studies have indicated that a great deal can be accomplished at relatively little cost if the States will take the lead in applying their efforts and those of local agencies in development programs in these areas. Through this process the related water and economic problems of small watersheds can be identified and alleviated with a

minimum of Federal participation. TVA's efforts in this field have been largely to study and demonstrate the results of a comprehensive approach to small watershed development in a few selected areas and to encourage initiative by the states in undertaking the necessary program leadership and coordination.

The 1957 estimate for tributary watershed development is $414,000, compared to the 1956 budget of $341,000. During 1957 research projects now in progress will be intensified. Developmental activities in the Chestuee and Beech River watersheds now underway will be carried on at about the levels of the current year. The extent to which TVA will obligate funds for specific development projects will depend largely on the extent of State activity.

Basic investigations, $146,000

Development of an effective program for conservation and use of land and water resources in a particular tributary watershed requires detailed information applicable to that type of watershed. TVA's watershed research program obtains basic information on soil and water behavior under conditions peculiar to the valley. This research is essential since data obtained in other areas are not directly applicable to Tennessee Valley watersheds.

Waynesville single-practice project.—Since 1948 TVA and North Carolina State College have studied the effects of cover changes on the water resource of six small watersheds near Waynesville, N. C. TVA furnishes the instruments for measuring precipitation, streamflow, runoff, and similar hydrologic factors and the personnel to evaluate and interpret the findings. The institution supervises the agronomic aspects of the project, which primarily consist of making changes in the type of land cover in order that the effect of various covers on hydrology can be measured. These studies will be continued in fiscal year 1957.

Parker Branch pilot watershed.—This watershed of about 1,000 acres in privately owned farms is located in western North Carolina. The project, which is carried out in cooperation with North Carolina State College, is the only watershed project in the United States where the effects on a stream of the development of best land use, economically speaking, are being measured with research accuracy. Changes in land use that result will be related to the changes in the character of the stream. Plans for highest economic development of the individual farms have been prepared. Changes in income and living standards of the farmers as they adopt the better farming methods are being studied. Fertilizers supplied by TVA and other incentives are used to obtain the cooperation of the farmers of the area in putting these plans into effect.

In 1957 intensive efforts to accelerate changes in land cover will be made. The cooperative arrangements with North Carolina provide for joint participation similar to that described under the Waynesville project.

A small watershed in the Norris Reservoir area is being used in a study of the effects on sedimentation, streams, ground water, and other hydrologic factors of a forest land-management system devoted primarily to watershed protection.

Chestuee watershed, $119,000

A coordinated demonstration program for the development of Chestuee watershed, an area of 134 square miles in east Tennessee, was started in 1951. The entire program is carried out in close cooperation with the University of Tennessee. Important contributions are also being made by many other groups, such as the Tennessee Department of Health, the Tennessee Department of Education, the Tennessee Department of Forestry, county and town governments, and rural communities. The local farmers put money and labor into the project in adjusting their farming systems.

During 1957 hydrologic measurements and analyses will be continued at about 1956 levels. Agricultural development in the watershed will be continued under the supervision of two special agents of the University of Tennessee who assist regular county extension forces in their work with farm families and local organizations. Ninety-two tons of fertilizer will be distributed to 40 test-demonstration farmers under a partial payment plan to stimulate the demonstration of improved fertilization and other recommended farm practices. Assistance in forest development in the watershed in 1957 will include the distribution of 50,000 seedlings and the conduct of meetings, conferences, and demonstrations to promote better forest protection, management, and utilization.

A cooperative study on human nutrition in the Chestuee watershed will continue in 1957 under the direction of personnel from the staff of Vanderbilt University. Support of the cooperative public health program sponsored by TVA and the Tennessee Department of Public Health will be continued.

Basic changes are beginning to become apparent in the watershed and adjacent area. Acreage in improved pastures on test-demonstration farms increased from 1,016 acres in 1950 to 4,524 in 1955. Countywide forest-fire protection is now available in 2 of the 3 counties involved. During 1953 forest-fire damage was restricted to 198 acres, one-half that recorded in 1951 before organized protection was established. A total of 180,000 trees was planted in 1955. Substantial changes in land cover have occurred, particularly on the lands where water runoff had been heavy. Sediment discharged into streams has been reduced by almost half. Farmers and other in the area have begun to clear Chestuee Creek of debris to help reduce high-water stages. Community organization has been strengthened. A multicounty health unit has been organized. Leading farmers are being encouraged to promote the spread of sound agricultural practices by assisting a neighbor to establish some new farm enterprise, such as growing alfalfa or starting a permanent pasture.

Beech River watershed, $90,000

The Beech River watershed covers 302 square miles in west Tennessee. Agriculture is the major industry in the Beech River area but large areas of land are unused and unproductive. The upland soils are washing away, and the bottomlands are subject to flooding and silting. The area has had a population loss; per capita income is very low; and industrial development has lagged. State and Federal expenditures in the area are disproportionately high compared to public revenues collected.

TVA made a survey of the Beech River area which defined many of the problems and suggested possible improvements. The people of the two counties in the watershed have expressed great interest in a development program for the area and have organized a local watershed committee which is planning specific measures to be undertaken. The State of Tennessee has taken leadership in the development of the Beech River watershed and the Governor has designated a representative to coordinate the work of the various participating groups, including TVA.

During 1957, 25 test-demonstration farms will receive 104 tons of fertilizer at reduced prices. TVA and the State of Tennessee will furnish landowners 2.5 million seedlings for reforestation. Through meetings, demonstrations, and conferences interest will be developed in forest-fire prevention, soil-erosion control, forest management, and better utilization of watershed forests. Technical assistance to develop local opportunities, as in industry and recreational facilities, also will be provided.

Other watersheds, $59,000

Results of earlier reconnaissance studies of watersheds in other valley States than Tennessee were presented to the State governments in 1955 and efforts will be made to encourage the States to assume leadership in planning and carrying out development programs in these areas of special need. Where warranted by State and local interest, TVA may join with State and local organizations in development projects. By 1957 it is expected that one new development program will be started, provided it is initiated by the State. The 1957 estimate provides for continuing limited technical and financial assistance in that watershed. These plans are dependent entirely on the response of the States.

TOPOGRAPHIC MAPPING ($100,000)

TVA's planning, construction, and operational activities have depended heavily upon adequate topographic maps of the valley area. Such maps were practically nonexistent in the Tennessee Valley in 1933. To have maps in time for them to be of real service, TVA sponsored a mapping program which is carried on cooperatively with the United States Geological Survey. Valley maps are made to United States Geological Survey standards and specifications and are a part of the national series.

The valley topographic mapping program was started in 1937 and was scheduled for completion in the 1940's. World War II prevented realization of this goal. In the fall of 1941 TVA was asked by the United States Army to accept responsibility for mapping strategic coastal areas. Extensive foreign areas were added to this assignment and valley mapping, already curtailed, was laid aside until after the Japanese surrender.

The scheduled program covers 765 quadrangles, or about 46,000 square miles. By June 30, 1955, approximately 80 percent of the work had been done. Some 195 quadrangles remain to be completed. The unfinished quadrangles represent

many areas of peculiar interest to TVA. That they are of interest to persons outside TVA is borne out by the fact that TVA receives numerous requests for maps of areas not yet completed. About $1 million has been spent on these unfinished quadrangles, mostly for aerial photograph, basic field survey work, and other activities preliminary to actual drafting. Completion of this mapping by 1961 will permit the present investment in unfinished quadrangles to be recovered in the form of published maps of great benefit to both TVA and the public.

The 1957 estimate of $100,000 will permit a continuation of topographic mapping at about the 1956 rate.

Mr. RABAUT. It would appear this program will become an increasingly greater drain on corporate funds. Am I safe in assuming you feel it is justified?

Mr. VOGEL. I do, sir, and I am sure we all feel it is a worthwhile program.

Mr. RABAUT. How much money is involved in this?

Mr. VOGEL. $1,150,000.

Mr. WAGNER. That is the total direct expense of the program.

Mr. RABAUT. $1,150,000?

Mr. VOGEL. Yes, sir.

Mr. RABAUT. You feel it is justified?

Mr. VOGEL. Yes, sir.

Mr. RABAUT. Do you want to enlarge on that a little?

Mr. VOGEL. Well, this is a rather broad program which gets into the fields of erosion control, hillside development, agricultural development. I think it is rather badly named, perhaps, although it does cover a broad field. Actually everything that the Tennessee Valley Authority is doing might be classified, I think, as resource development. This is one phase applying particularly to land usage off the main river but within the drainage basin.

Mr. RABAUT. It has a tendency to conserve the land?

Mr. VOGEL. I think it comes distinctly within the general provisions of the Tennessee Valley Authority Act, which provides for the development of the resources of that area.

COORDINATING WORK WITH OTHER GOVERNMENT AGENCIES

Mr. RABAUT. I think you are right. In reading your justification of your expenditure of $116,000 for agriculture resource development, it would appear that many of your studies could have value to farmers in that area. This suggests several related questions.

Why does not the Department of Agriculture do this sort of work? If that Department does it in other parts of the country, why has it not done it in your area? Or is this area the only part, or one of the few, receiving this type of service?

Mr. VOGEL. That is difficult to answer in a few words. Of course, as I pointed out, the Tennessee Valley Authority Act makes a special situation of this valley. It provides for its integrated development by the Tennessee Valley Authority. That does not mean, however, we do not work in cooperation and coordination with the Department of Agriculture, just as in the fields of navigation and flood control we work with the Corps of Engineers. In all cases we are trying to bring in local organizations to the maximum extent, utilizing the agencies of the States and the colleges in the region, hoping thereby to develop a sense of local responsibility and that this feeling will be transmitted to adjacent regions.

There is also an item in here, I might point out, for topographic mapping which is a very important function and relates closely to the work of national defense and ties into the whole system of mapping throughout the Nation. There is really nothing that is extremely different about the program as a whole, except the fact that it ties in with the local interests to a very large degree.

Mr. RABAUT. Does the Department of Agriculture have any activity in this area?

Mr. VOGEL. Yes.

Mr. RABAUT. And is there any duplication in it?

Mr. VOGEL. No; I do not think there is any duplication. We work with the Department of Agriculture and their representatives.

Mr. WAGNER. That is right. Mr. Chairman, this activity of TVA in the Tennessee Valley is a kind of activity that is not generally available in the rest of the country. But it does not mean that there are greater Federal expenditures in the Tennessee Valley than there are in the rest of the country as a whole. We have looked into that question and satisfied ourselves about it. So that if your question had in mind that this is something special in addition resulting in greater total expenditures than in the rest of the country, I believe the answer to that is "No." This falls well within the general limits of Federal expenditures in the rest of the Nation. One of the significant parts of this program has been an effort to increase the activities of the States in the resource development field and since 1933 they have increased their annual expenditures from about $5 million to about $55 million a year.

Mr. EVINS. If the chairman will yield for another observation, the President and the Department of Agriculture have recommended a soil-bank program and this committee has recently approved an appropriation in excess of $1 billion for a soil-bank program and embraced within the idea is to plant seedlings and take land out of production. This proposal is similar to the work being done by the TVA in this connection. So when we speak about the importance of proper land use in conservation, the TVA resources-development program is assisting the general soil-bank program.

Mr. PHILLIPS. I did not know that the soil-bank money was all going to be spent in one State, though.

Mr. EVINS. The gentleman is well informed about the TVA situation, having been on the subcommittee for TVA funds for many years. He knows or should know the TVA service area is an eight-State area.

FOREST LANDS

Mr. TABER. I wonder if you can give us a little description of what is actually done in connection with agriculture and this agricultural business by TVA, so that we might be able to tell whether it is the same thing that is being done elsewhere by the Agriculture Department.

Mr. VOGEL. One of the important activities consists of the preservation and development of the forest areas of the region. Mr. Kilbourne is here and I think it would be interesting if he could give just a few words on that, Mr. Taber.

Mr. KILBOURNE. Mr. Taber, forest lands amount to over half of the area of the Tennessee Valley—some 14 million acres. It is esti-

mated there is an additional 1½ to 2 million acres that should be planted to trees. We are interested in the forest resource from two standpoints; first, from watershed protection. This area normally has an extremely high rainfall averaging some 51 inches a year and we have highly erosive soils, which I can illustrate by a photograph here, if you would care to look at it. This [submitting] will illustrate some of the serious soil erosion we have in the valley.

The other aspect of TVA's concern is, of course, the effect of the forest resources on the economy of the region and the Nation, with over half of the valley in forest land, some of which you see is pretty badly beaten up, as illustrated by those two pictures.

The problems are, first, to develop protection of the existing forests from fire. At one time we used to call the Tennessee Valley the Valley of 10,000 Smokes. It had a terrific fire loss, but the States are making some headway now in cutting down fire loss.

Another problem is the reforestation of some million and a half to 2 million acres of land as illustrated by some of those pictures, and then the moving of this area of forest land from the debit column over to the plus column in its contribution to the total economy. As you can see from the first photograph, that land is producing little or nothing. A large part of it is owned by farmers; about 5 million acres is owned by farmers in small tracts and the rate of growth on this land is less than 100 board-feet per acre per year. If they could be improved, those lands can be made to produce somewhere in the order of 300 board-feet per acre per year by very simple improvements in woodland management. It is primarily an educational program. And if this could be brought about, the farm woodland owners would certainly increase their income by something in the order of $20 million a year, simply by doing a better job of managing and cutting their timberlands.

Mr. PHILLIPS. I would like to ask Mr. Whitten how much of the money his subcommittee appropriated is to be spent for reforestation in the Tennessee Valley area.

Mr. WAGNER. TVA's budget for 1957 is $520,000 for the entire forestry development program.

Mr. KILBOURNE. This is not a large program. The reforestation portion amounts to $129,000.

Mr. PHILLIPS. How much of that will be in Tennessee?

Mr. KILBOURNE. Well, it is a seven-State area. Of course there is more of Tennessee in the valley than any other State. I would say it would be somewhere in the order of one-third.

Mr. PHILLIPS. How much did you appropriate in your bill this year for the program of reforestation for the whole United States? Last year I think it was $500,000.

Mr. WHITTEN. We reorganized the committee and that subject is now under the jurisdiction of Mr. Kirwan; so I do not know what the figure is on it. But we have appropriated in times past for this type of work and much of the same job that is done in the TVA area is done throughout the United States by the Forest Service. In connection with forestry, we had a supplemental item under the gypsy moth, where we are trying to protect the forests, and this supplemental item was for $2.5 million. The soil conservation program under which part of reforestation is carried out is $250 million for the Nation.

Mr. PHILLIPS. Last year your committee put a limit of $500,000 on the amount to be spent for all of the United States on reforestation, and here are 8 States spending the taxpayers' money for $120,000. There was some question raised last year as to whether that was a fair balance in the reforestation program.

Mr. VOGEL. I would like to point out in that connection that I believe the figure of 8 is wrong; I think there are 7 States. The valley does not include all of any of the States, although in the case of Tennessee most of it is in the valley. The figure for reforestation would be only about $129,000.

Mr. WHITTEN. This reforestation has been taken out from under my subcommittee, so whatever action was taken was not a limit put on by my subcommittee.

But you do have another thing that would be greatly worthwhile in my judgment. I have four big reservoirs which are almost completely filled up in my area. If someone would plant trees on this area, which is a great deal outside of the TVA area, it would help in protecting those reservoirs and keep them from getting filled up and would be a great investment. It would have the benefit of keeping erosion from filling up the streams.

But as to the limit on what was spent in the rest of the country, that was not in my subcommittee.

Mr. PHILLIPS. Is any of the limited $500,000 being spent in the 7 or 8 States in the Tennessee Valley area? In other words, is the Department of Agriculture spending money in there for reforestation in addition to the money being spent by TVA?

Mr. KILBOURNE. If I understand what you and Mr. Whitten are referring to, it is a nationwide program in which the Department of Agriculture, through the Forest Service, makes small amounts of money available to the various States.

Mr. PHILLIPS. You are saying that in addition to TVA there is also some of this Agriculture Department money being spent in these seven States?

Mr. KILBOURNE. If I understand the money you gentlemen are talking about, I think that is correct. I am not sure I do understand. At one time the amount per State was of the order of $5,000 and I think the maximum for any one State was something like $10,000.

Mr PHILLIPS. That would be about right it runs about $10,000.

Mr. WHITTEN. May I say that the soil conservation program was an authorization of $250 million for years. Many of the States are practicing soil conservation, on which the Federal Government pays part of the cost of reforestation and the planting of seedlings and trees. We do handle that program. It is part of the $250 million program for the whole country and in many areas a great part of the total amount goes to reforestation. It does so because of local choice. It is one program approved by the Department of Agriculture—the planting of trees—which is left at the local level to determine whether that is one of the approved practices. And in the lower part of my State tremendous sums through that program are being spent and so it is part of the money.

Mr. TABER. What I tried to get at to start with is, are the agricultural soil conservation operations and these forestry operations conducted in the same place. Can anybody tell me that?

Mr. WAGNER. The Soil Conservation Service is active in the Tennessee Valley, as it is elsewhere. Whether it as as intensely active, I do not know. Mr. Kilbourne indicated some Forest Service activities are conducted there.

Mr. VOGEL. My observation is that the Soil Conservation Service is not as active in the Tennessee Valley as elsewhere, particularly in the Southwest. I do not have any figures on that immediately available. They are doing some work under the Hope-Aiken bill in the Tennessee Valley.

However, getting away from the forestry program for a moment, and talking about the tributary watershed development program which is the next largest item in this list, running to $414,000, that is carried on largely as a demonstration program to show what can be done by local interests, assisted by the States, in carrying this work into adjacent areas. We have programs on the Chestuee and Beech Rivers in Tennessee; we have research programs set up near Waynesville and Parker Branch in North Carolina at the present time. I feel those results will have a definite effect in getting the States to assume a greater responsibility in this connection and will possibly serve to cut down the Federal responsibilities in the future.

Mr. WHITTEN. I do not mean to belabor this issue and certainly I do not want to get in the attitude of testifying here, except in my experience in dealing with agricultural appropriations, the Soil Conservation Service is set up by State laws which permit the organization of farmers into soil conservation districts. In turn, the Federal Government provides the technicians to the soil conservation districts. Because of TVA's activities in this field in this area, almost altogether the cooperative effort contemplated in the Soil Conservation Service approach is handled by TVA.

May I say that last year in the presentation to our subcommittee of the President's soil-conservation program and rural community program which we included in our bill—I think it later went out in conference with the Senate—that provision was based on TVA's operation at the rural community level and the testimony presented by Mr. Benson to our committee to justify the President's program was on the basis of TVA having proven it in the local communities, particularly in North Carolina.

I have for many years had a chance to work with both of them and I have tried to keep duplication to an absolute minimum. As you can realize, it does not always follow a true line, so we do perhaps have a little of it. I do not think we have very much. And where the folks in some general area have joined together to carry out the program, I am firmly convinced if TVA did not do this job in this area and tie it into the overall operations, that we in turn would have to turn around and do it through the Department of Agriculture.

Mr. VOGEL. Mr. Taber, if I may make an observation at this point, which I hope is not irrelevant, we get many, many foreign visitors in the TVA area. They have heard of TVA and come there

from all over the world. I would say it is an odd week that does not have at least 40 or more visitors.

I tell these people, when I have an opportunity to speak to them, which is frequently, that the things they are seeing in the Tennessee Valley are things we are doing largely over the rest of our country—developing our resources to the best advantage in the interest of flood control, navigation, land development, and so forth; but that in this particular spot they are able to get a closer view of how these various activities are put together. And I think therein is one of the greatest values of TVA—that it serves as a proving ground of cooperative effort. And we like to think that this matter of working together between the several echelons of Government and among the several agencies of the Federal Government will result, or is resulting, in developing a pattern which will have an effect on the Nation as a whole.

We are working, as I have indicated, very closely with the Corps of Engineers. You probably know that they operate the navigation features of the Tennessee River. And our engineers are closely associated with them in an attempt to regulate the flood flow of the Ohio and Mississippi. We operate our system in part for that purpose. In the same way, we cooperate with the Soil Conservation Service and the other bureaus of the Department of Agriculture, and I do not believe there is any overlapping of consequence.

Mr. RABAUT. I note your county by county inventory of forest resources will be completed in 6½ years. Have you devised a relatively simple scheme which will keep this inventory current?

Mr. KILBOURNE. We think, Mr. Rabaut, we have. These reports, such as those for the counties under the original plan, are to be completed in 10 years. We can by the process of statistical analysis keep this information reasonably up to date, once we get the basic information. We now have less than one-third of the counties and are hoping in 1957, instead of getting 7 or 8 counties as we have in the past, to step that up to 12 or 15.

COUNTIES IN TENNESSEE VALLEY

Mr. TABER. I wonder if a list of the counties in each State involved in this activity of agriculture-resource development, forest-resource development, and tributary water-shed development which are participating in these programs could be inserted at this point in the record, separately by States.

Mr. RABAUT. Without objection.

Mr. VOGEL. That information will be obtained for you.

(The information requested follows:)

Counties lying wholly or partly in the Tennessee Valley number 125. They are as follows:

ALABAMA

Blount	Franklin	Madison
Colbert	Jackson	Marion
Cullman	Lauderdale	Marshall
Dekalb	Lawrence	Morgan
Etowah	Limestone	Winston

GEORGIA

Catoosa	Lumpkin	Union
Date	Rabun	Walker
Fannin	Towns	Whitfield
Gilmer		

KENTUCKY

Calloway	Lyon	Marshall
Graves	McCracken	Trigg
Livingston		

MISSISSIPPI

Alcorn	Prentiss	Tishomingo
Itawamba		

NORTH CAROLINA

Avery	Haywood	Mitchell
Buncombe	Henderson	Swain
Cherokee	Jackson	Transylvania
Clay	Macon	Watauga
Graham	Madison	Yancey

TENNESSEE

Anderson	Grundy	Marshall
Bedford	Hamblen	Maury
Benton	Hamilton	Meigs
Bledsoe	Hancock	Monroe
Blount	Hardin	Moore
Bradley	Hawkins	Morgan
Campbell	Henderson	Perry
Carroll	Henry	Polk
Carter	Hickman	Rhea
Chester	Houston	Roane
Claiborne	Humphreys	Rutherford
Cocke	Jefferson	Sequatchie
Coffee	Johnson	Sevier
Cumberland	Knox	Stewart
Decatur	Lawrence	Sullivan
Dickson	Lewis	Unicoi
Fentress	Lincoln	Union
Franklin	Loudon	Van Buren
Giles	McMinn	Washington
Grainger	McNairy	Wayne
Greene	Marion	Williamson

VIRGINIA

Bland	Russell	Washington
Dickenson	Scott	Wise
Grayson	Smyth	Wythe
Lee	Tazewell	

Forestry resource development activities are now or have been conducted in each of these counties.

Agricultural resource development activities are now or have been conducted in most of the counties listed.

Tributary watershed development activities are now conducted in Decatur, Henderson, McMinn, Monroe, Polk and Union Counties in Tennessee and in Buncombe and Haywood Counties, N. C. The budget for 1957 contemplates extension of these activities to about six additional valley counties as yet unselected.

While these activities are conducted primarily in the Tennessee Valley counties, most of them are cooperative efforts with the colleges and State agencies and consequently their influence and value is not confined to the watershed counties.

WATERSHED DEVELOPMENT

Mr. RABAUT. In discussing tributary watershed development, you point out that the Parker Branch pilot watershed of 1,000 acres is the only watershed project in the United States where the effects of a stream on the development of the best land use, economically speaking, are being measured with research accuracy. Considering the innumerable factors that could affect the results, do you feel that an area of this small size can produce answers that will have much practical meaning?

Mr. KILBOURNE. Yes, sir, Mr. Rabaut, we certainly do. This is a cooperative project operating through the North Carolina State College, in which they have two people stationed in the area, and this particular area in which Parker Branch is located is typical of much of the land not only in the Tennessee Valley, but throughout the South where we have small farms, many part-time farms of people working in industries and other places. As I recall it, in this 1,000 acres there are about 39 farms and our hydrological engineers, have calibrated the watershed, measuring the rainfall, runoff, and sediment.

After that was done, the North Carolina State College made a careful study of each of those farms and the land they had, and the use being made at the time; then that was put through a process which I hesitate to mention, because it sounds rather complicated, but they call it a linear program in which they consider John Jones's farm, his preference with respect to farming operations, his land resources, money resources, and come up with 2 or 3 alternatives that would give him the best return having due regard for good watershed protection and soil protection. And from those 2 or 3 alternatives, he then selects a farming program which he puts into effect on that land.

During the years the program is underway, the effects of the land-use changes are being gradually measured in terms of silt measurements, so that we will have for that stream a real test under practical farm operations of what the landowners themselves, with some technical help, can do to get the optimum economic return consistent with good watershed protection.

I think it will have tremendous value. It has already been visited by many experts in this field and we think it will have broad application throughout the whole Southeast as one way of getting at this problem of adjusting land use in such a way that the landowner can make an optimum income and still not jeopardize his soil and fill the streams with silt.

Mr. RABAUT. That is very well and good; but how are you going to apply that to another area where you have different soil, topographic conditions, and so forth?

Mr. KILBOURNE. I think the main value of this is the method by which this project was developed.

Mr. RABAUT. Then you are taking the methods employed here and trying to use those methods in another location entirely?

Mr. KILBOURNE. That is right.

Mr. VOGEL. May I say that during the last few years, as I am sure every member of this committee knows, there has been tremendous progress in bringing together the operating agencies of the Government, particularly the Bureau of Reclamation, the Corps of Engineers, the Department of Agriculture, and others with similar responsibilities for basin development.

I was myself chairman of the Arkansas-White-Red River Basin study conducted in the Southwest and great efforts have been made to coordinate those studies and get basic data which will assist in a solution of these very great problems. This study, which we are considering here, is on a small proving ground where methodology can be worked out and parameters obtained, and those parameters, I think, can be carried over almost directly to other watersheds. In general, we are after simplified methods which will produce results at a lesser cost and be of wider application.

TOPOGRAPHIC MAPPING

Mr. RABAUT. Last year, in regard to the topographic mapping program, you said your program covered 770 quadrangles and that by June 30, 1955, approximately 80 percent of the work will have been completed with but 200 remaining to be completed. This year, you state that 195 quadrangles remain to be completed. Does the completion of five quadrangles represent your work output program during the past year, or has considerable work been done on the uncompleted quadrangles?

Mr. WAGNER. Work on those maps involves several steps which are done in sequence. Five quadrangles were completed, but there are others on which some additional work was done. First there is the aerial-mapping job, the compilation job, then the drafting job, and so forth.

Mr. RABAUT. Is your estimate you made originally going to be met, would you say? You said you were going to do so much work; I presume it has been done, but has not been completely done, but probably an amount of the work has been done.

Mr. WAGNER. The amount of work contemplated in the budget will have been completed by the end of the fiscal year; yes, sir.

REIMBURSABLE SERVICES

Mr. RABAUT. Let us now turn to the title "Reimbursable Services." We will insert in the record page 110 of the justifications.

(The matter above referred to is as follows:)

REIMBURSABLE SERVICES

The 1957 estimate for reimbursable services is $2,427,000. These services are furnished at the request and expense of other agencies and in the case of Federal agencies are based on findings that the use of TVA's facilities and technical staffs results in overall savings to the Government. Services for other Federal agencies are performed under authority of section 601 of the Economy Act of 1932.

Included in 1957 are estimates for mapping services of $1,244,000 for the Department of the Army and $60,000 for the United States Geological Survey.

Also included is $489,000 for continuation of construction of a bridge over Watts Bar Dam for which reimbursement is received from the Public Roads Administration and the State of Tennessee in accord with Public Law 562. The balance of $634,000 includes loans of personnel and miscellaneous services for contractors and other agencies.

In addition to the estimate of $2,427,000, TVA performs services for the Department of Defense in connection with a classified facility. Costs for this defense activity in 1957 are estimated at $8,965,000 and are to be financed from working fund advances. In accord with prescribed procedures for allocated working funds, this amount has not been included in the total TVA budget.

AFTERNOON SESSION

Mr. RABAUT. I wish to ask a question off the record.

(Discussion off the record.)

ADMINISTRATIVE AND GENERAL EXPENSES

Mr. RABAUT. We will proceed with the Tennessee Valley Authority. We will take up the section of administrative and general expenses and insert pages 111 through 124 of the justifications in the record.

(The information referred to is as follows:)

TENNESSEE VALLEY AUTHORITY

SCHEDULE B–5.—*Administrative and general expenses (for fiscal years ending June 30, 1955, 1956, and 1957)*

	1955 actual	1956 estimate	1957 estimate
Expenses:			
Board of Directors	$88,969	$94,000	$94,000
Office of the General Manager	96,480	135,000	135,000
Budget staff	87,628	93,000	99,000
Government relations and economics staff	137,145	75,000	100,000
Washington office	42,525	49,000	49,000
Information Office (including technical library service)	245,989	175,000	234,000
Division of Personnel	869,208	800,000	827,000
Division of Finance	1,315,768	1,295,000	1,325,000
Division of Law	311,330	315,000	327,000
Division of Property and Supply	554,562	569,000	510,000
Operation of medical and safety service units	423,914	450,000	485,000
Other administrative and general expenses	40,765	63,000	65,000
Total expenses	4,214,283	4,113,000	4,250,000

Distribution of administrative and general expenses

	1955 actual		1956 estimate		1957 estimate	
	Appropriated	Corporate	Appropriated	Corporate	Appropriated	Corporate
Navigation, flood control, and power program:						
Assets	$1,564,807	$442,087	$1,025,000	$658,000	$321,000	$1,271,000
Expenses:						
Navigation operations	20,930		25,000		30,000	
Flood-control operations	7,535		10,000		15,000	
Power operations		1,243,149		1,375,000		1,500,000
Multipurpose reservoir operations	155,972	103,980	162,000	108,000	180,000	120,000
Total expenses	184,437	1,347,129	197,000	1,483,000	225,000	1,620,000
Fertilizer and munitions program:						
Assets	28,981		27,000	15,000	40,000	
Expense of fertilizer and munitions development	87,069	292,184	100,000	310,000	110,000	330,000
Resource development program:						
Expense of resource development	43,869	65,804	44,000	66,000	50,000	80,000
General service activities:						
Assets	3,755		8,000		8,000	
Expense of reimbursable services:						
Working funds		126,836		140,000		150,000
Other		27,325		40,000		45,000
Total distribution by funds	1,912,918	2,301,365	1,401,000	2,712,000	754,000	3,496,000
Total distribution	4,214,283		4,113,000		4,250,000	

Administrative and General Expenses (Schedule B–5)

This budget category, administrative and general expenses, includes some of TVA's most important managerial functions relating to program administration. It applies to the leadership and executive direction of the program as a whole; it embraces a variety of services performed for the benefit of all program activities; and it places at the command of every administrator and supervisor certain tools which are essential to the efficient conduct of program work.

The total estimate for administrative and general expenses in 1957 is $4,250,000; the 1956 budget is $4,113,000; and actual expenditures in 1955 were $4,214,283. These expenses are distributed to the various projects and programs and are included in the program estimates shown in the statements and schedules throughout this book. The detail of these expenses by organizational units and by amounts distributed to programs is shown in schedule B–5.

The 1957 estimate of each division has been carefully reviewed in order to hold administrative and general expenses to a minimum without jeopardizing the quality of services to operating programs. The fact that high-caliber administrative services can save significant amounts of the taxpayers' money is clearly demonstrated by a few specific examples. The Bureau of Employees' Compensation estimates that a single case of total permanent service-connected disability or death may involve a liability of more than $100,000 for compensation payable over the lifetime of the beneficiary. Even disregarding the cost in human suffering, the value of a well-rounded program of accident prevention is obvious. Last year the preaudit of 160,000 disbursement vouchers saved TVA $200,000 through the detection and correction of clerical errors and incorrect charges. Prompt handling of vouchers enabled TVA to take advantage of cash discounts exceeding $220,000 on approximately 40,000 vouchers. Together, these two amounts very nearly equal the total cost of all TVA auditing work. It is reported that turnover in the Federal service runs almost 25 percent a year and costs the taxpayers an estimated $500 per employee for replacement expenses; this does not include the valuable experience and know-how which are lost to the Government service with each separated employee. Personnel policies and practices have primary bearing upon the agency's employee retention rate; of its annual employees, averaging 12,000 last year, TVA lost less than 8 percent through resignation;

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total separations were around 15 percent for all causes including reductions in force.

In planning for the budget year, work assignments have been adjusted to achieve maximum utilization of present employees; and where adaptable, use of business machines is continually being enlarged to reduce cost of personal services, improve operations, and conserve manpower. Staff additions have been approved for a few significant areas of new or enlarged workload; where suitable, use of consultant services is planned for expert short-term help in lieu of adding permanent staff. Major changes in workload of administrative services are the following: Final cost reports and unit plant records must be prepared for the major construction projects recently completed. Reductions in construction forces as projects near completion require processing of terminations and supplying data for unemployment compensation claims. Recruitment, placement, and training of operating and maintenance crews for completed facilities involve all the many personnel and fiscal actions necessary in securing new employees and seeing that they are properly integrated into the work situation. Adequate health, safety, and other services must be provided to enable them to be productive and efficient workers. Advancing technology in electronic machines raises the question with all large organizations whether such equipment offers real opportunity of substantial operating economies. The size of TVA operations indicates the need to investigate the adaptability of electronic data processing machines to its particular activities. Staff assigned full time to this inquiry work with manufacturers on the capabilities of different type machines and consolidate information from divisions throughout TVA whose record and statistical work may be susceptible to electronic processing. There is growing nationwide concern over problems of older workers; TVA needs to give increased attention to questions of optimum use of its older employees, policies relating to conditions of retirement, and staffing of positions vacated by retirement.

The work of each office and division participating in administrative and general expenses is described below.

Executive direction and central administration

The TVA Act vests the Board of Directors with all the powers of the Corporation. The Board establishes general policies and programs, appraises program progress and results, and determines the basic organization through which TVA's program objectives are accomplished. All the expenses incurred by the Board are charged to administrative and general expenses. These include the salaries of the 3 directors and 4 secretarial employees, costs of travel, charges for office space and equipment, communication, and other items of related cost.

The General Manager is TVA's principal administrative officer. He is responsible for the execution of programs, policies, and decisions adopted by the Board. The costs of his office are charged to administrative and general expenses and include salaries and expenses for himself, two assistants, and the TVA employment policy officer position established in conformance to Executive Order No. 10590. Also included are the costs of secretarial employees and operation of the administrative files serving the Board as well as the General Manager's Office and the specialized staffs discussed below. Organizationally a part of the General Manager's Office and serving him and TVA as a whole in particular management capacities are the Budget Staff, the Government Relations and Economics Staff, the Information and Washington Offices.

The budget process is essential to most management decisions. The budget brings together in one place all available relevant information about the agency's activities, giving the executive decision-makers a clear-cut exposition of issues they have to resolve. The development of TVA's budget program, consolidating work plans and estimates for all organizations and all functions, is the major responsibility of the Budget Staff. Integral parts of this process, of course, are formulation of budget policies, application of a TVA-wide system of budget procedures, and appraisal of program plans and of program accomplishments. The Budget Staff also maintains relationships with the Bureau of the Budget and takes part in the presentation of the budget program to the Bureau and committees of the Congress. The Chief Budget Officer heads the staff of six budget analysts and a clerical group of three.

The TVA program next year involves the use of some $200 million counting both corporate and appropriated funds. In conducting a program of that size and variety, the General Manager and operating divisions must have facts about the economic current in which the program moves. Obtaining those facts and interpreting them is part of the work of the Government Relations and Economics Staff. The basic data come primarily from statistical series collected and main-

tained by other Federal agencies on a nationwide basis. The staff performs the research and analyses necessary to translate these data to a regional basis. The purpose of this work is to provide the TVA Board and staff information on economic changes in the area; to identify the significance of changing relationships between industry, agriculture, mining, forestry, etc.; and to spot trends toward or away from urbanization and industrialization.

TVA has, from the beginning, conducted its work with a view to achieving a full partnership of itself as a Federal agency with States and local agencies in the region. In continuing to strengthen and extend working relationships with these groups, operating divisions need staff help thoroughly informed in the complexities of intergovernmental relations and skilled in the solution of administrative problems. This is the second type of staff service available from the Government Relations and Economics Staff.

Good technical library services bring high returns for the amount expended for them. They save time of executives, scientists, engineers, and other professional personnel. They provide needed information for all employees more quickly than individuals can locate it for themselves. The extent to which these benefits can be realized depends not upon a collection of books and technical journals but upon the reference and research services of a trained library staff. The provision of technical library services in TVA is the largest single function of the Information Office. A staff of 10 people can make available to TVA employees as a whole the full advantages of its library resources which include some 45,000 books and 62,000 pamphlets, documents, and Government publications. This basic stock can be augmented by interlibrary loans, thus avoiding duplication of materials.

Answering questions about the TVA program is another major function of the Information Office. These inquiries, averaging over 1,000 a month, come from Members of the Congress, other public officials and agencies, and from the general public and the press. The Information Office responds to these requests; prepares TVA's annual report to the Congress, as required by law, and assists in the preparation of other TVA reports; and arranges schedules of persons who visit the valley to study TVA.

The Washington Office is the point of contact between TVA and the Executive Office of the President the Congress, and Federal agencies with headquarters in the Nation's Capital.

Management services

The several divisions listed in schedule B–5 serve management in many ways. The head of each division is the principal aide to the General Manager in a particular professional capacity. The staffs of the divisions develop procedures and maintain standards for TVA as a whole in the various aspects of administration; and provide the legal, personnel, fiscal health and safety, and other services common to all TVA functions and organizations. In short, these divisions provide specialized management tools to all levels of operation in TVA.

The General Counsel is the legal adviser to the Board and serves as Secretary of the Corporation. The Division of Law provides all legal services necessary to TVA activities, including the conduct of litigation as well as legal services comparable with those performed in other Government agencies; i. e., providing legal advice, preparing contracts, deeds, and other documents. The scope and variety of TVA's activities require extensive legal services in many fields. The fact that TVA operates the largest power system in the country, carries on extensive chemical operations, conducts a varied program of resource development activities, and prosecutes its construction program with its own forces indicates the volume and complexity of TVA's legal problems.

The Division of Law is responsible for keeping the organization advised of the impact of legislation adopted or proposed. Since TVA's work is carried on in 7 States, this means keeping in touch with the activities of 7 State legislatures as well as of the Congress. Legal work in connection with legislative matters is particularly heavy at the present time and is expected to continue to require large amounts of staff time and travel in the coming year. Litigation, including condemnation actions, also accounts for a large part of time of the legal staff. General litigation includes cases involving the enforcement of contracts, personal injury and damage suits, and title and trespass matters.

The Comptroller heads the Division of Finance and is the special aid to management on matters of accounting, financial records and reports, and the receipt, custody, and disbursement of TVA funds. He maintains relationships with the United States Treasury and the General Accounting Office. The Division of Finance performs the accounting, auditing, and disbursing functions

necessary to the conduct of TVA's business and to comply with legislative and executive regulations which govern the handling of funds. TVA's system of accounts is the basic framework for all these services. It is designed to provide management with current and detailed cost data for use in planning and controlling financial activities and in measuring accomplishments in terms of related costs. These data, reported monthly, include amounts of revenues and expenditures by functions, by organizations, and by objects. Thus, the system serves both accounting and budgeting needs; it conforms to generally accepted accounting standards and fulfills the requirements of the Treasury Department, the General Accounting Office, the Federal Power Commission, and the Bureau of the Budget.

To comply with section 14 of the basic act, TVA must keep its plant accounting records in accordance with the Federal Power Commission uniform system of accounts. This involves the use of a work-order system which shows the nature of each addition to or retirement of electric plant, the source or sources of the total cost thereof, and the electric plant account or accounts to which charged or credited. Under section 13 of the act, TVA makes payments in lieu of taxes to those States and local governments in which TVA carries on power operations and in which it has acquired properties previously subject to State and local taxation. The formula for allocating these in-lieu payments uses power investments by State location and, within some States, by counties and incorporated towns and cities. These investment allocations are made from TVA's plant accounting records.

A considerable volume of plant accounting work must be done upon completion of construction activities. This involves rendering final cost reports, preparing unit records, transferring work in progress to completed plant accounts, and other related activities. Plant records must be maintained as long as the property is in existence. Work required in continuing unit records increases with the age of the property; the older facilities become, the greater is the frequency and scope of plant replacements. Total plant in service now exceeds $1.7 billion, and by the end of fiscal year 1956 it will be in excess of $2 billion. The major portion of construction done in the past few years has been steam plants. Establishing and maintaining plant-unit records for steam-generating stations is more difficult than for hydro because steam plants are much more complex structures and contain a much greater number of property units.

Auditing, both pre- and post-audit, examines all financial transactions including revenues, payrolls, employee leave and travel, contracts, and agreements. It also includes review of accounts, financial statements, and systems of internal control. Purchases for steam plant operation and maintenance create a substantial workload for voucher auditing. The inventory of repair parts for each major steam plant will range from 7,500 to 10,000 items, including such things as conveyor belts, boiler tubes, bulldozers, valves of all kinds and sizes, motors of many descriptions, cables, bearings, armatures, and so on. Coal purchases totaled $47 million during 1955 and at year end, deliveries were being received at the rate of over 14.5 million tons from many mining points in 5 States; in 1957 coal purchases are expected to total 18 million tons from at least as many locations for delivery at the several different steam plants. Vouchers must be audited for both purchases and transportation of coal. Total voucher audit workload in the budget year will involve examination of about 135,000 vouchers (exclusive of payrolls) having a value of approximately $130 million. The level of disbursing work will require issuance of nearly three-quarters of a million checks and almost a quarter of a million United States savings bonds.

The Director of Personnel is management's chief adviser in the field of employee relations—in matters concerning the 17,000 men and women employed by TVA. He represents TVA in negotiations with employee organizations and in relationships with other agencies on matters of employment. Traditionally regarded as the hiring and firing function, good personnel administration, in both public and private practice, must now provide to operating management many other services between the employment and termination extremes of an organization's dealings with its employees. To convert manpower into a competent, productive work force requires expeditious recruitment and careful selection of employees; the organization of employees into efficient, interested, and informed work groups; the creation of a work environment in which each individual can, and wants to, contribute the best of his ability to achieving the agency's program goals. Well-rounded and thoughtfully conceived personnel policies are fundamental to all of this. Careful application of these policies and skillful supervision on the job do the rest. The Division of Personnel has primary responsibility for the

former and provides staff assistance and consultation on the latter to all operating managers from division heads through all levels of supervisors even to the squad bosses.

Good labor relations make a significant contribution to keeping work on schedule and doing it economically. TVA handles relations with organized labor groups through formal agreements and working arrangements with 15 international craft unions and 5 unions of white-collar workers. The Division of Personnel performs the research and makes the surveys preparatory to formal negotiations with these groups and handles other matters of mutual concern with them. Closely akin to these relationships and a valuable supplement to them is the employee-management cooperative program, one important phase of which is the fostering of work improvement practices. Last year there were 87 of these groups throughout the TVA organization; they received and evaluated over 2,100 suggestions of ways of doing particular jobs better, quicker, or cheaper; improving physical work conditions; promoting safety and health; and improving employee relations. The cooperative conferences and committees have helped to stimulate employee purchases of United States savings bonds through payroll deductions and share in TVA's present distinction of first place among large Federal agencies in the buying of bonds.

Personnel staff services are facing some new problems as the number of employees operating completed steam plants increases. In the past TVA has not had so large an operating force working on a three-shift basis. These are permanent employees, not a short-term group as are construction employees. As such, their work schedules and work conditions, pay rates, recruitment, training, and retention are matters of considerably different character than are policies applicable to construction workers. To make a good beginning in labor relations on these operating jobs will pay dividends in future employee-management cooperation.

Recruitment, certification, and appointment of these employees for power operations are the responsibility of the area employment offices at Knoxville and Chattanooga, Tenn., and Wilson Dam, Ala. These offices also serve all operating activities in those cities and surrounding vicinity. They draw on the occupational registers maintained in the central office in Knoxville which examines and processes applications, makes security investigations, and checks references. This office also executes and records all personnel actions and prepares periodic statistical reports on employment and other special reports as are required.

Concern for employees' health and safety is a good business investment in three dimensions: protection of human life, insurance against damage of property resulting from accidents, and reduction of injury compensation costs. Occupational hazards to employee health and safety come from two principal sources. They come from the work environment and they arise out of deficiencies in the workers' health capacity. Preplacement medical examinations, immunization services, periodic health examinations, prevention of accidents, medical and engineering control of occupational injury and disease hazards—all of these conserve trained manpower and contribute to employee efficiency and productivity on the job. In TVA, both medical and safety services stress prevention. Medical services identify health conditions which disqualify employees for particular kinds of work or which indicate undesirable response to factors in particular operations. Health problems thus detected are called to the employee's attention enabling him to seek early treatment by his personal physician. Safety services eliminate or control dangerous working conditions and teach employees to form safe work habits and to use safety equipment properly.

In order to effectively prevent occupational disease it is necessary to study and evaluate potential problems in the job situation such as the effect of coal dust and noise on health, the effects of exposures to radiant heat and to other harmful elements present in the work environment. With large numbers of employees working in chemical and power operations, TVA must get facts and be intelligently informed about the work environment and about the worker's health condition when he goes into it. This is the only practical way to prevent or control harmful exposure to employees and to protect against false and unjustified claims of alleged harmful exposure. The experience of industrial and business organizations elsewhere in the Nation clearly demonstrates the importance of preventing disability from coal dust, noise, and other hazards. These organizations have been faced with payment of millions of dollars in claims for damage to health, some of them valid, many apparently not clearly valid but nonetheless costly.

As power operations expand, increased time and attention must be given to investigating and controlling occupational hazards in the steam plants; these relate chiefly to noise and coal dust. More employees are placed under the professional medical care of the three area health offices at Knoxville, Chattanooga, and Wilson Dam. The steam plants are work locations removed from these principal centers of employment concentration; thus the health officers will need to travel to each of them on a regularly scheduled basis. In the budget year, two additional health officers will provide the flexibility and mobility of professional personnel necessary to provide essential services for these employees working at widely separated locations.

The Director of Property and Supply is the principal adviser to the General Manager and operating divisions on matters relating to property management, acquisition and disposal of land, transportation services, and office services and methods. The Division of Property and Supply makes available to all TBA organizations specialized staff services on selecting space, planning lay-outs of furniture and equipment, and organizing flow of work to secure the most efficient arrangement for office operations. The office methods staff carries on a continuous office supply and equipment conservation program and evaluates new office products and machines for possible application within TVA. It sets standards for office forms, reproduction services, and filing and disposition of records. The care and storage of all manner of reports, correspondence, and other papers can be needlessly expensive in space and salary costs; for this reason, a good system of records management consistently applied conserves both time and money.

The Division of Property and Supply operates central mail rooms in the three principal office locations (Knoxville, Chattanooga, and Wilson Dam) and provides messenger services for the delivery of interoffice mail. Annually, over 2 million pieces of mail are received from outside TVA; approximately 11.5 million pieces of interoffice mail and 3,000 telegrams are handled a year.

The estimate for other administrative and general expenses covers primarily the cost of the annual audit made by the General Accounting Office.

Mr. RABAUT. I note that the estimate for the Government relations and economic staff jumped from $75,000 to $100,000. What causes this 33⅓ percent increase over fiscal year 1956?

Mr. WAGNER. If you look at 1955, Mr. Chairman, you will see there was a very substantial reduction from 1955 to 1956. We have found that the 1956 level of expenditures has not enabled us to do some of the work which we expect of that staff, so in 1957 we are asking a partial restoration to the level of expenditures in 1955.

Mr. RABAUT. Did you limit your work in 1956?

Mr. WAGNER. No, sir; we just didn't get as many of the analyses made as we wanted and needed. This staff has the job of keeping us advised about the current economic situation in the valley in order to help us plan, carry out, and appraise the results of our various programs. It prepares information as to income trends in the valley by major economic groupings, the status of State and local government finances, and so forth.

Mr. RABAUT. What will be your expenditure for this item?

Mr. WAGNER. For 1956?

Mr. RABAUT. Yes.

Mr. WAGNER. We do not have the actual 1956 figure since the year is not yet finished.

Mr. RABAUT. How about 1955?

Mr. WAGNER. Actual expenditure in 1955 was $137,000.

Mr. RABAUT. Actual expenditure?

Mr. WAGNER. Yes, sir; the proposal for 1957 is $100,000.

Mr. RABAUT. Was this the proposal for 1956 which is listed here?

Mr. WAGNER. That $75,000 is the approved budget for 1956.

Mr. RABAUT. You don't know how much of it you have spent?

Mr. WAGNER. We will spend all of it or substantially all of it.

Mr. RABAUT. Have you any figures as of any date as to how much you had spent?

Mr. WAGNER. Yes, sir; as of March 31, that is for 9 months, we had spent 79 percent of the budget, $59,341.

Mr. RABAUT. According to last year's justifications it was $100,000 estimated. I am looking at page 107.

Mr. WAGNER. I believe our congressional estimate, the estimate which came to you last year, was for $100,000. That item was eliminated in the House, I believe, and the Senate restored $75,000, and that was agreed to.

Mr. RABAUT. Now you have used only——

Mr. WAGNER. We have used 79 percent of it in the first 9 months of the year. It was necessary with that reduced budget to reduce our staff, and we lost some people who will be very hard to replace. They were experienced in our work.

COAL-BUYING POLICIES

Mr. RABAUT. I note that your coal purchases will total 18 million tons. On March 1 a Member of Congress stated that your coal-buying policies are unsound, and he quoted an article which stated that there was a dangerous shortage of coal stockpiled at some of your plants. Would you comment on this?

Mr. VOGEL. I will be very glad to, sir. That accusation originated with a gentleman in Nashville who inserted a series of paid advertisements in some of the regional newspapers, and as far away as Chicago.

Mr. RABAUT. Was he in the coal business?

Mr. VOGEL. He had been in the coal business. Apparently he has retired. I don't know whether he still owns coal lands or not, but I think he does.

Mr. WAGNER. He does, sir.

Mr. VOGEL. The accusations were rather broad and sweeping but boiled down they indicated a fear on his part that the TVA was moving in a direction of creating an emergency whereby they would be justified as a Government agency to step in and in some manner confiscate coal fields, thereby going into the coal business.

I can assure this committee that there is no such intent in the minds of those who are on the Board of the TVA or those who comprise its staff.

There was an emergency of a kind, it is true. We build up coal stockpiles for the same reason you build up stockpiles of any commodity, to meet emergencies.

As you know, and I think as I brought out before this same committee at the time of the hearing on the supplemental appropriation, we had drawn down our lakes in the late fall as winter approached, conforming to established practice, and as indicated by our rule curves, in order that the reservoirs might be well drawn down and have sufficient capacity to store water which could create a potential flood hazard as the spring progressed.

As that was done we looked forward to the rains in January, which never came. As a result of that we were faced with the necessity of putting many of our older steam plants into commission, operating those on a much less efficient basis than we were able to operate our

newer and larger plants. We were also forced to operate all steam plants on an around-the-clock schedule, so that some of the coal piles became well depleted. This was the time when photographs were taken to show that there was an emergency.

Well, it is true there was an emergency. But since that time we have bent every effort to rebuild those stockpiles and the situation has been improving very rapidly. Today we are in a pretty good position.

I think any fears anyone may have that we are trying to set TVA up in the coal business are entirely unfounded.

Mr. RABAUT. How often have you had a similar experience to the one you just told about, where you lowered the level of these reservoirs and then discover you didn't get a rainfall to fill them?

Mr. VOGEL. This was the worst situation of record, I believe.

I might ask Mr. Kampmeier to go a little further in his memory than I can go to see if he knows of anything quite equal to it.

Mr. KAMPMEIER. Every now and then we have periods of unprecedented droughts. When we do we learn something more about what can happen to the drawdown of the reservoirs. But, as General Vogel said, this was a unique situation.

We had, in a 40-day period beginning in December and continuing into January, approximately one-eighth of normal rainfall. Normal rainfall in a period of that length at that time of year would be about 6½ inches. Once in 40 years, the records indicate, you will get as little as perhaps 3½ inches of rain in such a 40-day period. We had only three-quarters of an inch of rain in those 40 days, so you can see how unusual that situation was.

Mr. RABAUT. Under a situation such as that, which you cannot foretell, you naturally turn to the use of coal. Have you some sort of a yardstick which you go by as to keeping your stockpile replenished?

Mr. KAMPMEIER. Yes, sir.

Mr. RABAUT. How could you get the complaint? How could this complaint be made if you had kept a stockpile replenished?

Mr. KAMPMEIER. Our stockpiles were, of course, gradually dwindling during the fall and winter drought. We reduced our stockpiles from the summer of 1955 to the end of this period of drought by about 40 percent. That is, we drew out of storage about 40 percent of the coal that we had had in storage the preceding summer.

Apparently some of our critics felt that was an excessive drawdown and was putting us in a position of risking our ability to continue to carry our load.

Mr. RABAUT. What sort of transportation furnishes your coal to you?

Mr. KAMPMEIER. Rail, barge, and truck. Approximately half of it reaches the plant by barge, some of that traveling the entire distance from the mine by barge and most of it traveling part of the way by rail, truck, or both.

The predominant movement of coal, in the total movement from the mines to our plants, is by rail.

Mr. RABAUT. You could move it, then, during any season of the year?

Mr. KAMPMEIER. Yes. We have no need, as some utility systems do, of building up a stockpile against seasons in which they are unable to move coal.

Mr. RABAUT. Continuing further regarding this coal matter, another article charged that you are paying $1.50 a ton in extra freight for coal while mines in the immediate area of the Kingston plant are shut down for a lack of orders.

Mr. KAMPMEIER. That, sir is a completely erroneous and unfounded statement.

We were obtaining from the coalfields in the vicinity of the Kingston plant all the coal which was being offered to us there at the time. We supplemented that supply with rather minor amounts of coal brought up the river from other locations, and that coal which was brought up the river was brought up on an economically competitive basis. We did not pay any such costs as are referred to there, in the way of extra costs.

There was more freight cost, of course, on the coal brought in from a distance, but the total delivered cost was competitive.

Mr. VOGEL. I might add there, Mr. Chairman, that TVA follows the basic policy which I think is the only practicable one to follow in any Government operation. It solicits bids in connection with coal purchases and then makes awards to the lowest bidder.

Only when we are not able to obtain all of our needs in that manner do we go out occasionally and make additional purchases in line with those bids which have been previously received.

Mr. RABAUT. A while ago you said you were familiar with the criticisms which have been made. They were brought forcibly to our attention so we want to bring out one further charge which has been made: That you are letting long-term contracts to users without producing mines and companies with no financial responsibility. Would you care to speak about those allegations?

Mr. KAMPMEIER. I would be glad to comment on that, too.

We feel that the record will show that the performance by TVA's coal suppliers has been quite good. I will not say as good as we might like, because it has happened that within the last several months, in the vicinity of Kingston, several of the larger contracts which we entered into proved to be instances where the bidder had been overly optimistic about the time schedule on which he could build up production. He fell down in meeting the schedule. But by and large——

Mr. RABAUT. Are there penalties in those contracts?

Mr. KAMPMEIER. Yes, indeed. I was going to comment on that.

Mr. RABAUT. Have you collected on them?

Mr. KAMPMEIER. We have collected on some and are in the process of collecting on others.

Mr. RABAUT. You say trying to collect. Aren't they of such a responsibility that you can collect?

Mr. KAMPMEIER. We hope they are. The corporations concerned are in some instances challenging our right to collect from them.

I first want to make the point that we have on the average received about 95 percent or more of all the coal for which we have contracted, so that what we are speaking of are exceptions rather than the rule. There are always, of course, exceptional cases.

Mr. RABAUT. You see, among the charges they made they said that you are making contracts with those who do not have mines.

Mr. KAMPMEIER. That is not correct——

Mr. RABAUT. That is not true?

Mr. KAMPMEIER. That is not true——

Mr. RABAUT. And they also refer to the fact that you have contractors with no financial responsibility. While this is only a small percentage of your coal business, as you just admitted, nevertheless they do not say what the percentage is. However, if you are not able to collect from them then that part of it must be true.

Mr. KAMPMEIER. I think it is still an unfounded charge. Let me explain, if I may.

Mr. RABAUT. All right.

Mr. KAMPMEIER. Before we enter into a contract with any bidder we seek to determine what his financial standing is as well as what his resources of coal are.

If a company has a good financial rating in the established business guides which indicate financial ratings, we take due account of that.

However, rather than content ourselves with that we also require a bond of each supplier. He must provide a bond to protect TVA on his deliveries.

Mr. RABAUT. Every one?

Mr. KAMPMEIER. Every one of them, with only the very fewest exceptions, made at our option in cases where experience has shown over a period of years that a supplier supplies so regularly and so dependably that we are willing to save ourselves the cost of a bond.

Mr. RABAUT. Are any of those suppliers listed among this group which do not feel they should meet their responsibility now and pay for any nondeliveries?

Mr. KAMPMEIER. No, sir. The ones who are delinquent are suppliers whose deliveries were covered by bond, and we are looking to the bonding company as well as the contractor to make good.

Mr. RABAUT. Is there any truth to the charge that there is some thought of your turning to natural gas?

Mr. KAMPMEIER. We use natural gas in only one of our plants, and that is the old steam plant in Memphis.

Mr. RABAUT. Where is that gas made?

Mr. KAMPMEIER. That gas is produced in the Southwest and we purchase it from the Memphis Light, Gas and Water Division, which in turn purchases it from the Texas Gas Transmission Co.

Other than that we use coal in all of our steam plants.

We did seek some 5 years or more ago to make a gas contract which appeared to be favorable for the partial supply of fuel for one of our plants, but we were not able to complete the arrangements.

Other than that I am not aware of any instances where we have sought to purchase gas.

Mr. RABAUT. Located as you are there in the coal region, you are not far from it, are you?

Mr. KAMPMEIER. No. We are favorably situated with respect to coal and we would expect coal to be our——

Mr. RABAUT. Near delivery?

Mr. KAMPMEIER. That is right. We would expect coal to be the predominant fuel.

Mr. PHILLIPS. Perhaps the question could be worded a little differently and we might get a clearer record. Instead of asking, "Are you making contracts?" perhaps you should ask, "Did you make contracts?"

Did you make contracts with people who had no mines, no financial backing, no standing in the ordinary business sense, people who would come in and bid on a contract of that magnitude?

Mr. KAMPMEIER. Mr. Phillips, the practices which we follow today are essentially the practices we have been following for several years.

We have been gradually looking harder and harder at the circumstances in the individual case because we found that 5 years ago, or thereabouts, there were a few instances of small contracts which we had taken on faith——

Mr. PHILLIPS. That is a matter of comparison as to how small it is.

Mr. KAMPMEIER. Then let me try to define that. I don't have exact figures before me and therefore I didn't try to be precise. However, I was referring to a few individual contracts for, let us say, $20,000 worth of coal a month, or some such quantities as that.

Mr. PHILLIPS. It is a fact, is it not, that those contracts were given to former employees of the TVA and to people who had no financial responsibility otherwise?

Mr. KAMPMEIER. As far as I know no contract was given to former employees of TVA. There were some contracts given to folks who had limited experience in the coal business but who had coal properties acquired under option and who had experience in other commercial operations.

Mr. PHILLIPS. Like keeping a country store, for example?

Mr. KAMPMEIER. Possibly, although I don't recall any such.

Mr. PHILLIPS. Running a honky-tonk, for example?

Mr. KAMPMEIER. I recall that term, sir, because the Chicago Tribune made quite a play of that reported incident.

Mr. PHILLIPS. It is all a matter of record and I didn't want to revive it. I thought Mr. Kampmeier was making a very generous——

Mr. RABAUT. Off the record.

(Discussion held off the record.)

Mr. PHILLIPS. The other thing I was going to suggest, if you change the tense of another question you asked, find out how long it has been that TVA has been requiring performance bonds on these.

Mr. RABAUT. All right. Answer that question.

Mr. KAMPMEIER. Mr. Phillips, speaking from memory, I would say that it has been practically a hard and fast rule for 3 or 4 years. This covers the period since our coal use has increased markedly. I would say perhaps 95 percent of all the coal TVA has bought has been bought under contracts requiring performance bonds.

Mr. PHILLIPS. My point is that I think it is laudable of the TVA to make a correction but the record was very clear a few years ago that they were not conducting the coal buying or coal contracting according to the procedures which you were giving Mr. Rabaut as the present procedure. Is that right?

Mr. KAMPMEIER. To a degree, sir. This committee had a hearing at one time, some few years ago, as I am sure you recall, where this was discussed at some length, and I will not undertake to try to speak from memory with regard to those points.

I believe the record speaks for itself, however.

Mr. PHILLIPS. This advertisment that you referred to, Mr. Chairman, stated, and I quote not from the advertisement, although it is here, that "TVA issued a statement about February 1, 1956 that it had 75 days supply of coal at the Kingston plant and on February 24, 1956, which was 3 weeks later, TVA stated that it had 40 days supply of coal at all plants."

I simply ask, did the TVA issue those statements?

Mr. KAMPMEIER. The TVA did not issue those statements. Those statements are twisted representations of the statements that TVA made.

Mr. VOGEL. I might clarify that simply by stating it this way:

The statements were not made to the press by our technical people. However, I think that some such figure was given by our public relations group; and their response was to an inquiry about the rate of depletion considering current burning and resupply.

Mr. PHILLIPS. Is your public relations man here?

Mr. VOGEL. No, sir.

Mr. KAMPMEIER. May I expand on that? I believe there is a misunderstanding there.

Mr. RABAUT. Go ahead and tell about it.

Mr. KAMPMEIER. The public relations man in question discussed these statements with me before they were made and therefore I wish to take responsibility for them.

First with regard to the 75 days, the statement was made, and it was very clearly made, that at the rate at which the stockpile was being drawn down, taking into account, Mr. Phillips, the receipts as well as the burn, that that rate of drawdown if continued would exhaust the stockpile in 75 days.

That was a completely accurate, and, I think, clear statement. It was misquoted in the advertisement.

Secondly, the statement with regard to the 40 days' supply was to the effect that the total quantity of coal in all TVA's stockpiles was equal to the amount of coal TVA expected to burn in the next 40 days, and that too was entirely correct and also consistent with the figures which are reported regularly by the Federal Power Commission as to average stockpiles elsewhere, State by State.

Mr. RABAUT. What about these pictures? Are these trick pictures of the different activities and showing no coal in the coalyards?

Mr. PHILLIPS. That was the full page advertisement showing aerial photographs of the coal piles.

Mr. KAMPMEIER. Perhaps your eyes are better than mine but I was not able to tell from the pictures where the coal was or where it was supposed to be. However, I can give you detailed figures on how much coal was on the ground at any plant on any day.

Mr. PHILLIPS. According to your own records you had 432,655 tons.

Mr. RABAUT. We have to get to the floor to vote.

Off the record.

(Discussion held off the record.)

Mr. TABER. I wonder if someone could take a pointer and show me where these steam plants are?

Mr. KAMPMEIER. Yes, sir. Take first the plant mentioned here, the Kingston plant. It is on the upper reaches of the Tennessee River.

Coming down the river, we have a steam plant here at Watts Bar Dam, one at Widows Creek in northeastern Alabama, the Colbert and the old Wilson Dam steam plant in northwestern Alabama, the Johnsonville steam plant in western Tennessee, and the Shawnee steam plant on the Ohio River downstream from the mouth of the Tennessee.

Mr. TABER. Are there others?

Mr. KAMPMEIER. Yes; the John Sevier steam plant in eastern Tennessee, and the Gallatin steam plant, which is still under construction and has not yet begun to burn coal, on the Cumberland River.

Mr. VOGEL. Did you mention Kingston?

Mr. KAMPMEIER. Yes, sir.

Mr. TABER. Where are the coal mines with reference to these plants which need coal?

Mr. KAMPMEIER. The coalfield from which we receive perhaps more coal than any other is that in western Kentucky. It occupies an area of approximately this size in western Kentucky [indicating with pointer]. Then, more or less part of that same general coalfield, is the southern Illinois coalfield, some 50 miles north of the Shawnee steam plant.

The coalfields in the eastern part of the area include the southern portion of the east Kentucky coalfield, and the extension of that coalfield down into east Tennessee in this general area [pointing] north of Kingston. There is some scattered coal along the Tennessee River from there down to southeastern Tennessee, where you will find the southern Tennessee coalfield. The Alabama coalfield, from which we receive limited amounts of coal, is centered at about this point near the so-called Warrior area in Alabama.

I should also mention the coal in southwestern Virginia, which is part of a coalfield contiguous to that of eastern Kentucky, and from which we are beginning to get coal in recent months for the John Sevier steam plant.

Mr. TABER. I wish we could put in the record some kind of map which would show that.

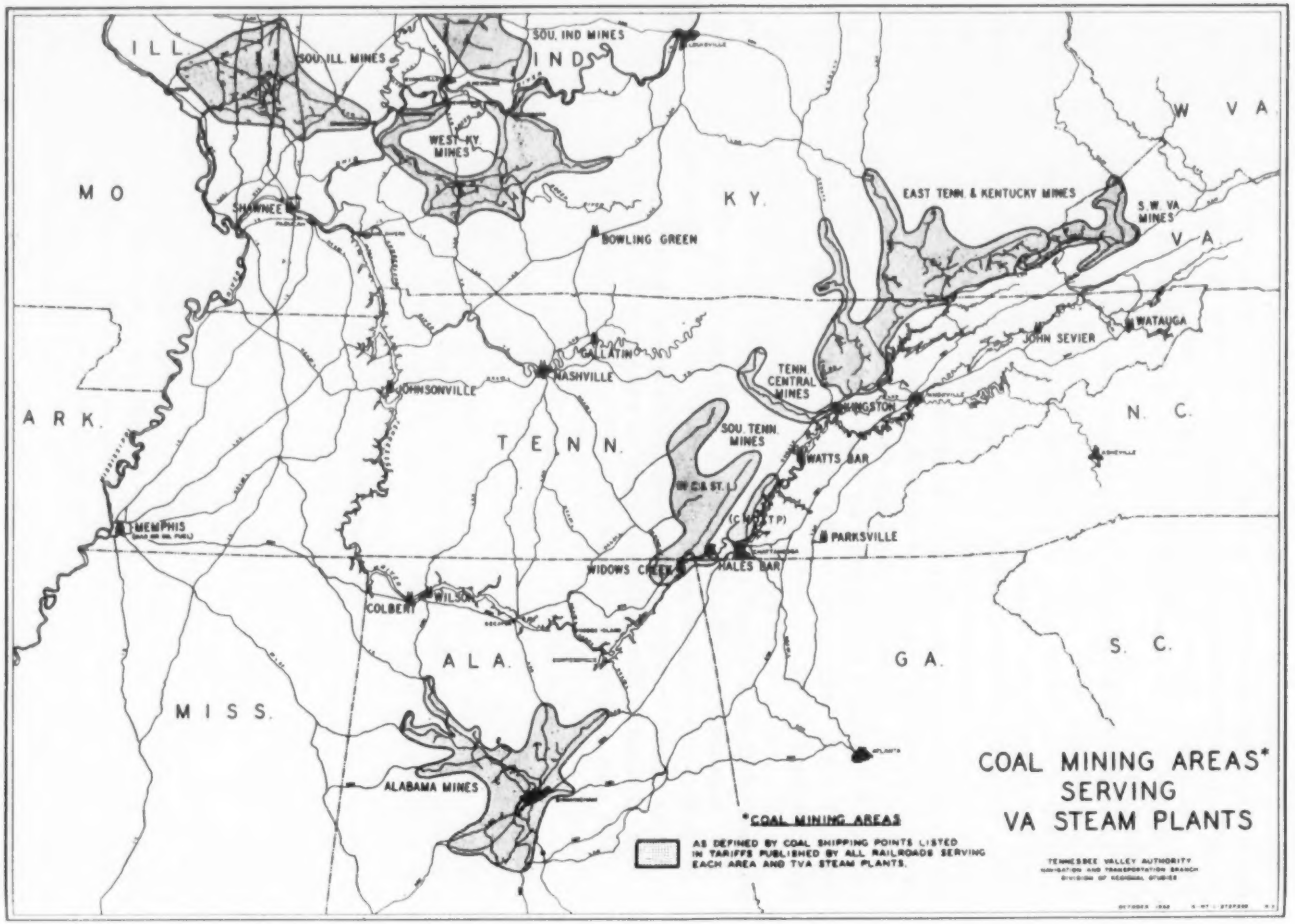
Mr. KAMPMEIER. We can, sir. I have one here.

Mr. RABAUT. Let us see it.

Mr. TABER. It may not be possible to insert it in the record.

Mr. RABAUT. We can get it in if you want it in.

(The map referred to follows:)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SHAWNEE
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S.W. VA. MINES
BOWLING GREEN
V A.
WATAUGA
JOHN SEVIER
GALLATIN
NASHVILLE
TENN. CENTRAL MINES
JOHNSONVILLE
ARK.
KINGSTON
N. C.
SOU. TENN. MINES
TENN.
WATTS BAR
PARKSVILLE
MEMPHIS
WIDOWS CREEK
HALES BAR
COLBERT
WILSON
ALA.
GA.
S. C.
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ALABAMA MINES
*COAL MINING AREAS
AS DEFINED BY COAL SHIPPING POINTS LISTED IN TARIFFS PUBLISHED BY ALL RAILROADS SERVING EACH AREA AND TVA STEAM PLANTS.
COAL MINING AREAS* SERVING VA STEAM PLANTS
TENNESSEE VALLEY AUTHORITY
NAVIGATION AND TRANSPORTATION BRANCH
DIVISION OF REGIONAL STUDIES

Mr. TABER. This is what I was struck by in connection with this matter: There has not been as much judgment shown in connection with the locating of these steam plants as there might have been by putting them next door to a mine. That is supposed to be the most modern way of developing that sort of thing. I have had the idea that you have not been following that.

Mr. KAMPMEIER. Mr. Taber, we wish the geography were such that we could come a little closer to following that practice than we have been able to.

Our steam plants are located for the most part on the Tennessee River itself, and there are no coal mines of any consequence located adjacent to the Tennessee River.

We have the choice either of locating the steam plants on the river, where there is an abundant supply of cooling water and easy transportation of coal from a variety of sources, or of trying to find a location adjoining mines but necessarily at some distance from the river and in all probability at a location where adequacy of water supply would be an extremely difficult problem costly to overcome.

Mr. TABER. All of these large plants that have been built for the atomic-energy setup, like the one near Paducah and the other one in the Ohio Valley are right next door to coal mines, aren't they, or awfully close?

Mr. KAMPMEIER. No, Mr. Taber. There are two powerplants which supply the AEC Paducah plant. One is the steam plant built by Electric Energy, Inc., at Joppa, Ill., and the other is the one built by TVA—the Shawnee steam plant. They are practically across the river from each other, so each is essentially as close to the coal mines as the other.

Mr. TABER. How far away are they?

Mr. KAMPMEIER. Roughly 50 miles from the coalfields.

I believe I am correct in saying that the average distance for transportation of the coal is shorter to those plants than it is to the plants that have been built by the Ohio Valley Electric Corp. to serve the Portsmouth plant of the AEC.

Mr. TABER. How far are they?

Mr. KAMPMEIER. I would not want, without checking that, to speak with any claim of precision, but I do know that some of the cheapest coal bought by the Ohio Valley Electric Corp. is to be brought out on the Green River from a point—roughly where this pointer is—in western Kentucky. It has to be brought about 100 miles up the Green River into the Ohio, and then a considerable distance up the Ohio to the power plant in question, so the distance certainly is very much in excess of 100 miles, but I don't have an exact figure.

Mr. RABAUT. At these various places, how many days would you last with your coal supply which you claim is 40 days if no deliveries were being made to those places during that period?

Mr. KAMPMEIER. The 40-day figure, Mr. Rabaut, is intended to mean that if there were no coal whatever coming in that the supply would last 40 days.

The 40-day figure——

Mr. RABAUT. Is that the true meaning of the phrase as we are using it here today?

I notice at times you say "based on the rate of receiving the coal."

Mr. KAMPMEIER. Yes, sir, in the case of the 75-day figure which was referred to. I would like to explain that it differed from the 40-day figure for that reason.

The 75-day period was stated as being the length of time that the Kingston stockpile would last if it continued to be drawn down at the rate it was then being drawn down, taking receipts into account.

The 40-day figure on the other hand, is an average——

Mr. RABAUT. It just seems to me that when you are quoting a 70-day period or a 75-day period and a 40-day period you ought to be using the same yardstick when you are talking to a committee of Congress. We are not looking for technicalities in an explanation. We are looking for a statement of fact.

If you say we have 75 days of coal, it means you have 75 days of coal in the stockpile, not what you are receiving. It is 75 days.

If you have 40 days it is 40 days you have in the stockpile.

Mr. KAMPMEIER. I agree.

Mr. RABAUT. According to your statement the 75 is not under the same circumstances as the 40?

Mr. KAMPMEIER. Let me explain.

Mr. RABAUT. I don't see how you can explain it except to say you are using two different standards of measurement.

Mr. KAMPMEIER. We are; let me explain how that happens.

The reference to 75 days came up here this morning only because we were accused in an advertisement—referred to here this morning—of using a misleading figure.

The 75-day figure is not the way we normally would refer to the stockpiles. The way it occurred in the first place is that a newspaperman—on a newspaper in the vicinity of the Kingston steam plant—called one of our people and said, "We understand that your stockpile is going down fast. Do you expect it to continue to go down that fast?"

We said no, not indefinitely. If we did it would run out sooner or later.

He said, "How long would it last at the rate it is going down?"

We said, "Taking into account the coal coming in, the coal we are burning, and the way it is going down?"

He said, "Yes." And that is when we gave that figure.

That was picked up in other stories. Next it appeared in this advertisement completely out of context and completely misquoted.

The figures we attempted to give in response to all general inquiries were in the same terms as the figures which the Federal Power Commission publishes every month for the power systems in all States, and that is in terms of how many days you get if you divide the current rate of consumption into the number of tons in storage, taking the system as a whole.

Among the things we were criticized for is that we were alleged to have said that the 40-day figure was true of each plant. That was not the wording of the allegation, but it was the implication—that we were trying to create the impression that we had a 40-day supply at each plant. The statement was, I think I have the statement here, but never mind——

Mr. PHILLIPS. I think the statement referred to Kingston.

Mr. KAMPMEIER. No, the 40 was an average for all plants.

Mr. PHILLIPS. The 75 days referred to Kingston?

Mr. KAMPMEIER. The 75 days referred to Kingston.

Mr. PHILLIPS. Forty days to all plants?

Mr. RABAUT. Your explanation now is very understandable, but when we started to talk about this we did not get this explanation.

Mr. PHILLIPS. I still think there is a catch here that I do not understand, and I think it might be cleared up in continuity.

Was your January rate of use a reasonably normal rate?

Mr. KAMPMEIER. No, sir; it was not.

Mr. PHILLIPS. Was that the maximum rate?

Mr. KAMPMEIER. Our January rate of use was the maximum rate. We were burning coal more rapidly in January than we had at any time before, than we have any time since, or than we anticipate doing any time in the next few years.

Mr. PHILLIPS. The next question would be, Mr. Chairman, should you not be accumulating coal stockpiles on a basis of a probable or possible maximum use?

Mr. KAMPMEIER. Mr. Phillips, we did.

Mr. PHILLIPS. You say you did. You also say that the Federal Power Commission puts out figures, and you accept them. On the basis of the Federal Power Commission figures divided by your use in January, your average use in January, you had 16 days supply on hand at Kingston on February 1, not 40 like you told the chairman.

Mr. KAMPMEIER. I did not say there were 40 days supply at Kingston. I did not say and would not say, because it would be incorrect to say, that there were 40 days' supply at Kingston.

Mr. RABAUT. What did you say?

Mr. KAMPMEIER. For the system, as a whole. We made the statement that at the rate we expected to burn coal during the coming weeks we had for the system as a whole a total quantity of coal equal to the amount we expected to burn in the forthcoming 40 days.

Mr. PHILLIPS. Which I suggest is a meaningless statement because what they had on the other side of the system is not going to heat the boilers at Kingston and on March 1 you had 8 days' supply at Kingston, not 16, and on April 1 you had 12 days' supply.

Mr. EVINS. Will the gentleman from California yield?

Mr. PHILLIPS. Yes.

Mr. EVINS. Does the gentleman want a large stockpile of coal for TVA or do you want the Agency to run short?

Mr. PHILLIPS. I want him not to run short. He is running short. I do not have to ask him to do that. I think this is a matter of testimony. At no time in this testimony has he given those figures.

Mr. RABAUT. What explanation do you give, for instance, for the low stockpiling of the coal at Kingston and how would it be efficient to the system to be caught there with 12 days' supply?

Mr. KAMPMEIER. Do not let me be interpreted as suggesting that it was a desirable situation. I do not say it was. I am saying that we endeavored to provide——

Mr. RABAUT. What strength does that condition give to your statement that you had 40 days' supply? Suppose that went down in 8 days or 12 days, whatever that amount of coal was according to the official report; what good is the 40 days' supply for the whole system when these units are widespread?

Mr. KAMPMEIER. Mr. Rabaut, one of the reasons why these figures were being sought by the press was that we were being accused in these advertisements of something that was not so. The advertisements said that power systems elsewhere find it imperative to maintain stockpiles of 80 to 120 days and that TVA's stockpile was such and such at various plants—much smaller figures.

Now, then, if figures are going to be compared they ought to be on a comparable basis. I refer you, for example, to the reports of the Federal Power Commission as of January 1, as of February 1, and so forth. Those figures are given by States. FPC showed that as against the stockpile on January 1 for the State of Tennessee of 40 days—and Tennessee has very few steam plants in it that are not TVA steam plants, and Kingston is among them—that the stockpile, for example, in New Jersey was 47 days; in Massachusetts it was 44 days; it ranged all the way from as low as 23 days in Wyoming to as high as 135 days in Wisconsin.

Now, therefore, it was not true, indeed it was completely misleading to say—as the advertisement did—that power systems find it imperative to maintain stockpiles of 80 to 120 days. Furthermore, it is completely misleading to compare any such figures with figures which were computed for the advertisment on a different basis for TVA. We were doing our best to quote figures which would be on the same basis as is commonly used in the industry, namely, dividing the total supply for the system by the current daily consumption by the system and arriving at a resulting number of days' supply. That would make the TVA figures comparable with the figures published by the Federal Power Commission for States all over the United States, which showed that stockpiles elsewhere ranged from substantially less than TVA's to several times more than TVA's. No two systems agree on how much coal ought to be in stockpile at a given time, but all systems agree on why stockpiles are there. They are there so that if you need them you can use them, even if you draw themnearly empty. That is what we did as others do.

Mr. RABAUT. Your area has an advantage over some of the areas quoted.

Mr. KAMPMEIER. Yes, sir; in that it is not necessary for us to maintain as large a stockpile as a State which depends on transportation on water that is frozen several months of the year.

Mr. RABAUT. Off the record.

(Discussion off the record.)

Mr. EVINS. General Vogel, with respect to the coal supply situation is it not true that you are in a position where you cannot win either way you go on some of these propositions? Your policy, as I understand it, is to distribute and disperse the procurement of coal to as large a number of producers as possible and not to grant all of the contracts to one monopoly coal interest; is that not substantially one of your policies in this area?

Mr. VOGEL. I can put it simpler than that, Mr. Evins. We buy where we can buy in the best interests of the Government and the people—the cheapest.

Mr. EVINS. TVA is not only criticized by the monopoly coal interests, but also criticized by the coal miners and labor unions at times because you do not pay as high a price as they would like for you to pay.

Mr. VOGEL. Yes, we have had some of that criticism.

Mr. EVINS. You are being criticized by the large coal interests and also being criticized by the labor and coal-mining interests, union interests?

Mr. VOGEL. Yes, sir.

Mr. EVINS. In other words, you are trying to buy the coal in the best interests of the Government at the most reasonable price possible.

Mr. VOGEL. That is what we hope to do.

Mr. PHILLIPS. That in a sense was my question, because I thought the record showed the TVA bought its coal on bid.

Mr. EVINS. TVA buys its coal on a competitive bid basis, as I understand it, and from widely distributed sources.

Mr. PHILLIPS. How can you say they try to spread it over where it will do the most economic good?

Mr. EVINS. I asked General Vogel if it was not their policy to not concentrate purchases all in one hand.

Mr. VOGEL. We buy where we can buy cheapest.

Mr. TABER. Do you pay attention to the competitive bids and grant the contracts to the lowest responsible bidder?

Mr. VOGEL. Yes, sir; on a basis of heat units as measured in the coal as sampled. Not necessarily on a basis of tonnage, but of heat content of the coal, B. t. u. content.

I would like to say one thing in this connection which may help clarify the situation. You can realize, when you put a steam plant as large as the one at Kingston suddenly into operation in an area that it may have a jarring effect on the local economy. Here is the largest steam plant in the world going suddenly into operation in an area where it is necessary to obtain coal reasonably nearby. That coal is to be found in the east Tennessee field, but those mines had not been developed. They are small mines; they have not been developed to the point that they have a large amount of machinery with which to work and the operators are finding it difficult to get into production fast.

We think that this situation will improve as time goes on. As a matter of fact, those of our stockpiles which, as we have said, became greatly depleted in January, have been building up gradually all through March and April. They are still not to where we would feel we are on Easy Street, but they are daily getting better and even at Kingston I believe we now have around 25 days' supply.

Mr. EVINS. In other words, you have not run short or run out of coal and your stockpile is now being rebuilt, and you are purchasing at the lowest cost and at the most economical cost in the interest of the Government regardless of criticism both of coal-mining unions and the large coal-mining interests?

Mr. VOGEL. That is our intent.

Mr. MURRAY. May I have one question?

Mr. RABAUT. Yes.

Mr. MURRAY. When you are purchasing coal by virtue of competitive bid, do you do it on an annual basis?

Mr. VOGEL. No; we do it on a basis of, you might say, anticipated need. It is not even what you would call seasonal, but anticipating a period ahead where the need will occur, we try to time our advertisements so as to be ahead of that.

Mr. WAGNER. Invitations to bid are issued indicating that we intend to buy approximately so many tons per week and indicating the various locations, and suppliers are asked to offer as much coal as they wish. On any one invitation awards may be made to several suppliers, as many as we need to take, going from the lowest bidder on up in order to supply the amount of coal we need to get on that particular occasion.

Mr. KAMPMEIER. As to the terms of those contracts, they are generally from 1 to 3 years.

Mr. MURRAY. I understand. In other words, you try to foresee your full requirements for a period of 3 years and predicate your competitive bid contract on the basis of those requirements; is that right?

Mr. KAMPMEIER. We try to foresee at least a portion of our coal requirements that far in advance so that we can make some contracts for periods as long as that. However, we invite new bids at intervals normally of 3 or 4 months, sometimes oftener than that. Each time we will enter into additional contracts for 1 to 3 years' duration, so that there is a sequence of new contracts being made and of old contracts expiring practically all the time.

Mr. MURRAY. Mr. Chairman, that is all the questions I have on this.

Mr. RABAUT. I do not know if you were here when we talked about the amount of coal. The purchases in 1957, coal purchases, are expected to total 18 million tons. We are not talking about anything small. This is a big piece of business. Go ahead.

Mr. WHITTEN. One thing that might clarify some of this is that the TVA buys its coal on competitive bid, but buying it in not too large quantities, breaking up the submission of proposals for various locations within the TVA system, they accept the lowest bid. Anybody can see, if the TVA were to let one contract to supply its whole operation, the effect would be to give a monopoly of the business to one contractor; so they try to have the benefits, as I understand it, of competitive bids by advertising at various times. A large number of contracts provides a degree of spread among suppliers on a competitive bid basis.

Mr. VOGEL. I am glad you brought that point up. It raises another point we should make clear. I do not want the committee to go away with the feeling that we have said we buy all our coal on a competitive bid basis because that would not be correct. We try to buy most of our coal on a formal competitive bid basis, but we also make certain purchases on a spot basis and I think Mr. Kampmeier had better tell you how we do that.

Mr. RABAUT. Tell us about the spot purchases.

Mr. KAMPMEIER. With regard to spot coal I believe the point that General Vogel intended to emphasize was the type of purchase arrangement.

The spot bids are not handled with the same prolonged period of advertising, waiting to open bids, and so on, as the term bids. The term bids that we invite at intervals, as we were just explaining to Mr. Murray, are invited several weeks in advance so that there is ample time for the supplier to develop a term proposal.

In the case of the so-called spot coal we give the suppliers in the areas of service an opportunity, at least once a month and normally twice a month, to offer coal for delivery within the next 30 to 60 days.

Mr. RABAUT. Offer it for delivery?

Mr. KAMPMEIER. Yes, by competitive bidding, but we do not require sealed bids or a long period of advance notice. It is announced that bids will be opened on a given date, say the first of the month, and then after a period of about 7 days thereafter we will begin buying coal from among that which has been offered, on the basis of low competitive bids.

Mr. RABAUT. The spot coal purchases, are they usually at a lesser figure or a greater figure than your other purchases?

Mr. KAMPMEIER. They are most likely to be at a little lower price, but often they are at very nearly the same figure. The spot coal tends to follow the market for term coal.

Mr. RABAUT. It is a relief for people with coal and you take advantage of the market by saying "we would like to get some spot coal at this time."

Mr. KAMPMEIER. That is correct, sir. One of the purposes that serves is to take care of the situation of a producer who is building up a temporary surplus, may even have cars loaded on the track which he is having trouble disposing of.

Mr. RABAUT. And he can save on demurrage?

Mr. KAMPMEIER. Yes, for he can sell on short notice in that way.

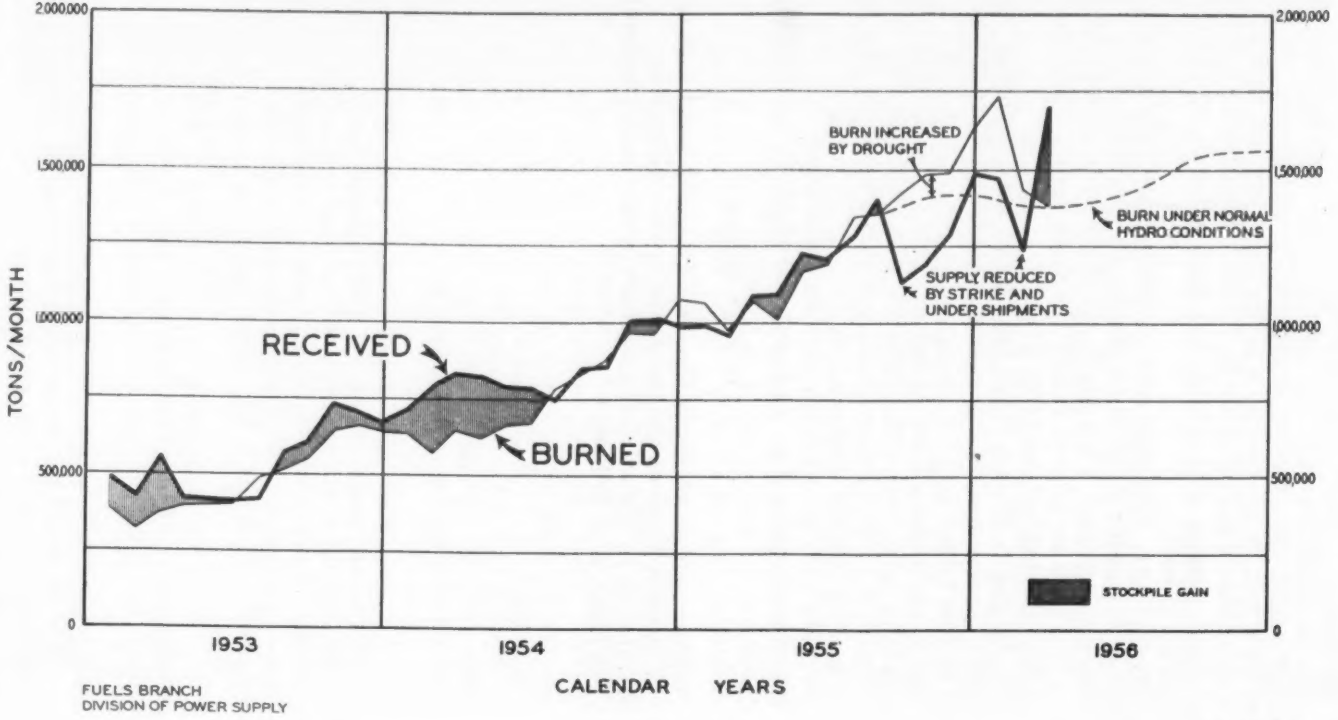
TVA COAL SUPPLY

Perhaps before we leave the coal I should hand you a chart that might interest some of the members of the committee.

Mr. RABAUT. We will put this chart in the record, without objection.

(The chart is as follows:)

TVA'S COAL SUPPLY



FUELS BRANCH
DIVISION OF POWER SUPPLY

G-PY-805A504

Mr. RABAUT. What is this TVA coal supply in the calendar years from 1953 to 1956?

Mr. KAMPMEIER. That chart shows in a heavy line the amount of coal received from month to month and the lighter line is the amount burned.

You will see, first, how rapidly the coal use has built up.

Mr. RABAUT. The space in between is your stockpile?

Mr. KAMPMEIER. Yes, sir. The space where it is shaded is coal being added to stockpile and where it is open coal is being taken out of stockpile. You can see what happened during the winter of 1955–56; the burn went up sharply and coal receipts dropped off a couple of different times, so stockpiles were drawn down.

MAIL

Mr. RABAUT. Now, we are going on. I note that annually we receive over 2 million pieces of mail from outside TVA. Could you briefly give a breakdown of the composition of this mail load?

Mr. WAGNER. In general, Mr. Chairman, this mail comes from the general public who have questions about TVA. Some of them have criticisms about TVA. The letters also come from Members of the Congress, they come from the State agricultural colleges, from departments of State government. I suppose that our mail receipts are about as varied as the population of the United States.

INVENTORIES

Mr. RABAUT. Let us turn to "Inventories" and insert into the record page 125 of the justifications.

(Information referred to follows:)

INVENTORIES

Inventories are estimated to increase during 1957 by $1,772,000, of which $1,769,000 is for power inventories and $3,000 is for chemical inventories. The increase in power inventories includes $679,000 for supplies of coal at additional steam units being placed in operation and $1,090,000 for power materials and supplies required in the operation and maintenance of the additional facilities in service in the power system. The increase of $3,000 in chemical inventories reflects a minor change in the value of raw materials and supplies expected to be on hand at the end of the year.

Mr. RABAUT. I note that your inventories are estimated to increase by $1,772,000. Your table C in the budget, "Statement of financial condition," indicates an increase of $1,579,000. Is there some reason for the $193,000 difference that we appear to be overlooking?

Mr. WAGNER. Mr. Ellis is familiar with those tables.

Mr. RABAUT. Very well.

Mr. ELLIS. The difference represents income from the sale of obsolete inventories, Mr. Chairman. The statement C is a balance sheet and the change which you note there is a net change after sale of inventories, as well as use of them.

Mr. RABAUT. Where do you find $193,000?

Mr. ELLIS. The $193,000 figure itself does not show up in the budget, I believe. It is included in an income figure appearing on page 5 of the justifications. There is a miscellaneous category of income near the bottom of page 5, which includes $193,000 of income from the sale of inventories.

Mr. WAGNER. The $193,000 is not separately listed, but under current income there is an item headed "Miscellaneous," about two-thirds of the way down the page and the proceeds from the sale of retired plant and other miscellaneous receipts includes the $193,000 from sale of inventory materials.

Mr. RABAUT. Is there no place here where you make reference to this $193,000? It is quite a big sum of money.

Mr. WAGNER. It is not shown in these tables as a separate figure; no, sir.

Mr. VOGEL. That would appear in our annual report.

Mr. RABAUT. We will now turn to general questions. Are you representing Mr. Kirwan this afternoon?

Mr. WHITTEN. I am representing the Chairman, Mr. Cannon. He asked me to come down to serve in his absence.

Mr. RABAUT. If you have any questions, we will hear you.

Mr. WHITTEN. Out of the graciousness of you gentlemen of the committee I am sitting here. I will pass asking any questions at least at present.

POWER GENERATING UNITS

Mr. EVINS. Mr. Chairman, this is the second trial run of your Board before this committee this year, is it not?

Mr. VOGEL. Yes, sir.

Mr. EVINS. Previous testimony has been given in recent weeks with relation to $3.5 million supplemental item which has not been approved yet.

Mr. VOGEL. So I understand.

Mr. EVINS. Previous testimony was based upon the fact that the Bureau of the Budget recommended this money to begin the John Sevier steam plant, and also the recommendation embraced the building of two new units at the Johnsonville steam plant, did it not?

Mr. VOGEL. Yes, sir.

Mr. EVINS. Going back just a little bit further the Board a year ago, had considered, had it not, recommending to the Bureau of the Budget six units to take care of the needs of the area?

Mr. VOGEL. I believe that is correct. Without refreshing my memory I would agree with you.

Mr. EVINS. In any event the Board did recommend to the Budget Bureau for the present budget under which we are now operating four new units; is that correct?

Mr. VOGEL. I do not recall that right now.

Mr. EVINS. You testified to that effect during the supplemental appropriation hearings.

Mr. VOGEL. I am sure it is correct, if I so testified to it at that time.

Mr. EVINS. Although the Budget Bureau did not approve that recommendation they recommended an alternative plan which, after a long fight, resulted in a cancellation of the so-called Dixon-Yates proposal by the President. Is that not correct?

Mr. VOGEL. I personally fail to see how this ties in.

Mr. EVINS. I am endeavoring to develop the background so I can show the long range and repeated recommendation of your agency of the need and necessity for funds to take care of future power growth needs of the area.

Mr. VOGEL. I think there is no question about the point that our agency has to make very long range prognostications. We certainly can go along to that point.

Mr. EVINS. You made those "prognostications" to use your terminology. They were not carried out last year and this year the Budget Bureau recommended a supplemental item of $3.5 million to aid in the ultimate building of three new needed units.

Mr. VOGEL. That is right.

Mr. EVINS. And this latter request has not yet been approved. We have now before us the regular budget for next year and the new funds requested in this budget is the lowest recommendation of new funds for TVA at any time in its history; is it not?

Mr. VOGEL. Yes; I think that is correct.

Mr. EVINS. This new budget only makes request for new funds for $5,375,000 and none of that is for building of new generating units or power capacity?

Mr. VOGEL. That is correct, for the reason, as I indicated earlier, that we are still hopeful of congressional action on revenue bond issues.

Mr. EVINS. That is the point I am trying to reach. In case there is no action on the revenue bond situation—and this is in May now; we are quite advanced in this session of Congress—and in the event the funds are not approved, which have not thus far been approved, what would be your situation?

Mr. VOGEL. There would be a possible power shortage at the end of 1958 and that would have to be met by some other means.

Mr. EVINS. You state in your justifications, General Vogel, that generating units now under construction were planned to provide for system power requirements through the calendar year 1956 with a "modest reserve." Would you please tell the committee just exactly how modest is this reserve in terms of kilowatts?

Mr. VOGEL. The reserve amounts to approximately 300,000 kilowatts.

Mr. KAMPMEIER. At the end of 1956.

Mr. EVINS. Your budget for the next fiscal year would provide TVA with only a 300,000 kilowatt reserve. Does that take into consideration the supplemental request which has previously been before this committee?

Mr. VOGEL. The supplemental would have no effect at the end of 1956.

Mr. EVINS. That would be the picture at the end of 1957, if the supplemental is not approved?

Mr. VOGEL. That is right. It would have an effect on power capabilities by the end of 1957; in which case, with those units in, we would have a very small reserve in the system.

Mr. EVINS. With the units you would have a very small reserve and without the units there would be a power shortage?

Mr. VOGEL. That is right.

Mr. EVINS. Now, General, it is understood that approximately 50 percent of the power produced by TVA goes for defense installations, at the Atomic Energy Commission, Oak Ridge and Paducah; the Air Engineering Development Center, Tullahoma; and the Redstone guided-missile installation, at Huntsville, Ala. Is TVA operating on such a modest margin that if demand for power in these important defense installations were only slightly increased it would endanger

the efficiency of these vital defense installations? Does not this possibility exist?

Mr. VOGEL. We have taken into account what we believe to be the anticipated needs of those installations and surely in the face of a shortage such as we experienced at the peak of this past winter, we would make our curtailments from industries where we have interruptible power contracts rather than from Government agencies.

Mr. EVINS. I take it, General Vogel, you have conferred with officials of the AEC regarding their future power needs?

Mr. VOGEL. Yes, we have.

Mr. EVINS. Has a similar investigation been made with respect to the AEDC and the guided-missile installation at Huntsville, Ala.?

Mr. KAMPMEIER. We try to keep informed on their needs as far in advance as they can tell us about them.

Mr. EVINS. What would be the effect, Mr. Chairman, on TVA if these defense installations were prompted by an international situation to a sudden demand, let us say, of a 20 or 25 percent power increase? Would TVA be able to supply it?

Mr. VOGEL. No, we would not be able to meet any such increase as that.

Mr. EVINS. The only way you would be able to approach supplying it would be to cut off power from industry, from consumers, municipalities, co-ops and others; would that be your method?

Mr. VOGEL. Presumably so, yes. Although we would also make every effort to obtain additional power from private producers in the vicinity and I might point out in that connection that in the past we have made considerable such purchases.

Mr. EVINS. The reason for my question is obvious because of your statement that your budget is based upon a very modest reserve. I am concerned about how this modest reserve will affect our area needs because of our defense installations and because we know of the increased power demand generally in the area.

Can it be reasonably concluded from your statement in the present justifications that TVA power is being operated on a "shoestring" margin?

Mr. VOGEL. I would say we are operating within a very modest margin. Considering the size of the system and the variety of generating facilities, I think that we can afford to operate on a somewhat lesser margin than a smaller private power organization could afford to operate on. I think you can see that we have reserves in the very size of the generating facilities, the very size of the system that we operate.

Mr. EVINS. It is certainly your view and hope that the funds requested in the supplemental budget for the three new units in the system will ultimately be approved?

Mr. VOGEL. We certainly do.

USE OF REVENUES

Mr. EVINS. General, what is your view with respect to the hue and cry we hear about disallowing TVA the right to use its corporate funds, reserve funds, which have been accumulated from profits?

Mr. VOGEL. I think the matter is very readily resolved by 1 of 2 means. The suggested method we made here some time ago was to

appropriate the $3.5 million and thus solve the problem or if there is a question beyond that it would be a very simple matter for Congress to declare its approval of the utilization of corporate funds. I think it is recognized there is some doubt about the existing authority, at least there are two sides to the question and as long as such doubt exists it could be dispelled quite readily by a positive action on the part of Congress.

Mr. EVINS. We hear a lot of talk that TVA should stand on its own feet; "let TVA stand on its own feet" her enemies cry. It has now reached the position where, at least for a temporary time, TVA could stand on its own feet, if it were not blocked in the use of corporate funds; is that not correct?

Mr. VOGEL. I do not think it is correct. When you say for a limited time, I suppose I would have to agree with you but I feel that it would be entirely impracticable to operate TVA and meet the obligations of the future entirely on a basis of the utilization of revenues. The only way that could be accomplished would be by increasing the rates so that the income might thereby be increased.

Mr. EVINS. We also hear a lot of testimony that TVA should be kept responsible to the Congress. TVA is responsible to the Congress; is it not in your opinion?

Mr. VOGEL. As a Government corporation I feel it is definitely responsible to the Congress and should remain responsible to the Congress.

Mr. EVINS. TVA makes its annual reports to the Congress; you, as chairman, come before legislative committees when requested; you appear before the Appropriations Committee at least once a year and sometimes more; so TVA is in fact responsible to the Congress.

Mr. VOGEL. I think the question there would be on whether or not Congress would be given an opportunity to approve the actions of TVA in advance of those actions being taken.

Mr. EVINS. Do you not think that responsibility is a two-way street, that the Congress also has a responsibility to the people of this 7-State area that is dependent upon TVA for its source of power supply?

Mr. VOGEL. I would not want to define the responsibilities of Congress. I think that is for Congress to determine.

Mr. EVINS. I am not asking you to define it, but I am saying that since we heard so much hue and cry about TVA being responsible to Congress, I am asking you, under the present situation where the people of an extensive area are dependent upon TVA for its source of power supply that the Congress also has its responsibility under the law in this connection with this Government agency in its relation to the people?

Mr. VOGEL. Yes; I feel that the Tennessee Valley Authority has a definite responsibility to meet the demands within the region, and I would certainly hope that the Congress would find some means whereby we can find it possible to meet those obligations and responsibilities.

Mr. WHITTEN. Would the gentleman yield?

Mr. EVINS. Yes.

Mr. WHITTEN. General, you do agree that unless TVA can have available to it from some source funds to put in these new units, that you do face a power shortage in the area by the end of 1958?

Mr. VOGEL. The President's budget has made that very clear.

Mr. WHITTEN. You agree with that; that it is so?

Mr. VOGEL. Yes.

Mr. WHITTEN. Further in that connection, when you look around you to other utilities that serve other territorial areas, none of them but what are having problems of projecting their own power needs into the future and they, in turn, are trying to get built up to where they can meet their own area needs; is that right?

Mr. VOGEL. Actually TVA's problem is the same problem that confronts every power organization, private or public, in the country. We are growing at a rapid rate and I think the average annual rate of growth is about 10 percent over the entire United States.

Mr. WHITTEN. If my friend will permit me one further question involved in this power need: There will be a shortage, you say, by 1958 unless there are additions to the generating capacity. About the only way that need could be met in time would be by adding units. You could not meet it yourself if you had appropriations and had to put in new projects or if you bought it from private utilities they could not provide it by building new facilities—I am talking about timing. The only way you can complete it in time to meet the apparent shortage is adding units to existing establishments?

Mr. VOGEL. We have even gone so far as to point out particular units, in particular unit 4 at John Sevier and 7 and 8 at Johnsonville.

Mr. WHITTEN. Thank you.

Mr. EVINS. General, you did testify that the budget request for all operations of TVA for the next year, which does not include any funds for added power, is the smallest appropriation request in the history of this agency?

Mr. VOGEL. Yes, sir.

Mr. EVINS. The $5 million budget is certainly reduced as contrasted to $188 million and $120 million in recent years?

Mr. VOGEL. That has been brought out; yes, sir.

SURPLUS LAND

Mr. EVINS. Now, General, on page 28 there is an interesting statement regarding the sale of lands of the TVA. Will you please tell us again just what is planned in the way of selling the real estate of the agency?

Mr. VOGEL. You mean as to how that will be done?

Mr. EVINS. How many acres and when you propose to dispose of this acreage?

Mr. VOGEL. That is the land at Norris Reservoir, of which we have 18,000 acres above the 1,044 elevation. And because we do not feel it will be necessary to operate that reservoir above that elevation, and because it would be a burden to retain that, we desire to sell it back to the public at an estimated amount of about $630,000.

Mr. EVINS. You have determined that 18,000 acres of land is surplus to your needs. It is not an effort to liquidate TVA, but this is land that, in your opinion, is surplus to the Authority's needs.

Mr. VOGEL. I think we can get a lot of people to say that that is true.

CHEMICAL FACILITIES

Mr. EVINS. There has been considerable comment lately concerning TVA's chemical—research plant at Muscle Shoals, Ala. Will you explain to the committee what is going on at this center for the record as far as you can, and how this project relates to the national-defense effort?

Mr. VOGEL. There is a close relationship, as I stated early today, between the research into the elements of nitrogen and phosphorus in their relation to fertilizers and munitions of war. In peacetime we operate our research center primarily for fertilizer development, but we always keep an eye to defense needs. And I would like to point out that after World War II when no longer needed for munitions, we turned those plants to fertilizer manufacture, always bearing in mind they could be reconverted to the manufacture of nitrates for war.

In the Second World War, there was great need for elemental phosphorus, and the plants which had been producing phosphorus for fertilizer were converted, within a single day, to the production of war materials. During the Second World War, we produced approximately 60 percent of all elemental phosphorus used by the Armed Forces and since between that time and the Korean conflict there had developed much greater commercial needs for phosphorus, we found it necessary to produce almost 100 percent of the elemental phosphorus used by the Armed Forces during the Korean war.

The work going on now at Muscle Shoals is coordinated very closely between our people and the representatives of the Chemical Corps and we are actually operating their plant at the present time in that vicinity.

Mr. EVINS. Your budget request for this work is limited to the amount of $1,238,000. Is this correct?

Mr. VOGEL. I believe that is correct.

Mr. EVINS. We have had very considerable testimony concerning the fertilizer program. I think it should be emphasized that a great many States outside of the TVA area benefit from this program, and agriculture generally and also American industry benefits, in that TVA has turned over free to industry some 70 or more patents which they have developed in TVA's studies. Is that a correct and fair statement of the situation?

Mr. VOGEL. That is correct as I recall it; yes, sir. This has proved, we feel, a stimulus to the fertilizer industry. I was saying the other day that in effect one thing we are doing is to produce the samples which industry needs to get farmers to using their product.

Mr. EVINS. And not only do the farmers benefit all over the country, but American industry benefits as well?

Mr. VOGEL. The fertilizer industry.

Mr. EVINS. And the amount of fertilizer produced is negligible in comparison with the production of fertilizer in the Nation?

Mr. VOGEL. About 2 percent, I believe.

FOREST RESOURCE DEVELOPMENT

Mr. EVINS. Concerning the reforestation program, the President has recommended an extensive soil bank proposition and this committee has initiated action to provide funds to implement it. One of the main features of that is a seedling program, or to do a lot of

reforestation work and take land out of production. Tell us about what work TVA does in this regard and how your work has been curtailed.

Mr. VOGEL. I do not think it has been curtailed particularly.

Mr. EVINS. Well the budget has certainly been reduced for this work, and one of your plants has been closed.

Mr. VOGEL. This present budget would increase our production of seedlings by 3.3 million more trees over last year's budget.

Mr. EVINS. Which one of your nursery seedling plants is closed at the present time?

Mr. VOGEL. The one at Muscle Shoals.

Mr. EVINS. TVA has one at Clinton, Tenn., and one at Muscle Shoals, Ala.?

Mr. VOGEL. Yes, sir. The one at Muscle Shoals was closed some time ago.

Mr. EVINS. The proposed budget for this work is $129,000 for next year.

Mr. VOGEL. That nursery at Muscle Shoals was closed in 1954.

Mr. EVINS. In other words, one of your nursery plants is closed and the President has recommended an extensive soil bank program to be implemented by the planting of seedlings, to take land out of production, and notwithstanding these facts one of your plants for this purpose remains closed.

Mr. VOGEL. That was done in 1954 and the President has recommended an increase in the production of seedlings at the nursery which is in operation at Clinton. That being the most efficient and effective one to operate, we prefer to operate it on a full-time basis, rather than to do a lesser job with two.

Mr. EVINS. There have been considerable reports and considerable press comment to the effect there are insufficient seedlings to reforest the acreage which will be taken out of production——

Mr. VOGEL. I am trying to make clear by repetition the fact that this budget increases the number of seedlings by 3.3 million trees.

Mr. EVINS. Sometimes it is helpful and necessary to be repetitious. Would you be able to reopen the Wilson nursery plant with this amount of money?

Mr. VOGEL. No; that has been closed. It was closed in 1954.

Mr. EVINS. Did you ask for this amount of money, or did you ask for a greater amount of money for this purpose?

Mr. VOGEL. This is the amount which was asked for.

Mr. EVINS. Could you reasonably use $40,000 or $50,000 more in this work in the next year?

Mr. VOGEL. I think we would prefer to stick with the budget we have. It has been very carefully considered. It was recommended by our people who know the most about the needs of the valley and the needs of the program, and this is their recommendation.

Mr. EVINS. Several of my colleagues seem to be very much interested in this item.

Mr. VOGEL. May I ask for a consultation with our man who is responsible for this program, Mr. Kilbourne?

Mr. EVINS. Yes.

Mr. KILBOURNE. This budget was developed before the idea for the soil-bank program came into being, and we have been working closely with the Department of Agriculture, supplying them informa-

tion on what potential increases we could make if and when the soil-bank tree program does materialize. As of now, the provisions in it with respect to tree planting are still uncertain.

Mr. EVINS. That is the Department of Agriculture plans?

Mr. KILBOURNE. Yes, sir.

Mr. VOGEL. I might say, too, in this connection, that we do work closely with other agencies of the Government in trying to meet their needs and for some years we have been supplying seedlings to the Corps of Engineers.

Mr. EVINS. The general information abroad is that there are not enough seedlings to take care of the big demand and won't be enough to take care of the demand.

Mr. VOGEL. Of course that is in part a responsibility of the State; and the States cooperate in this program with us. We would like to do everything possible to get the States to assume an even greater responsibility.

Mr. EVINS. You have not asked for any more funds, and you have not answered my question—Could you use more funds for this work in view of the national importance that is being placed upon it at this time?

Mr. KILBOURNE. One of the practical limitations on this is the simple matter of availability of tree seed. During this current year, until there is another seed crop in the fall, we could not expand our tree production. If we had more money and were in position to plant more tree seed next spring, we could greatly increase our capacity. But as of the current growing season, we could not increase our tree production.

If the program develops and we are called upon to increase our nursery capacity under the President's program, we would need additional funds in order to buy additional seed this fall to go into the ground next spring.

URANIUM RECOVERY

Mr. EVINS. Your justifications indicate that the AEC is interested in the recovery of uranium from Florida phosphate rock. Please tell the committee what progress you are making in this program.

Mr. VOGEL. I want to ask Mr. Walthall to tell you about that. I might say, however, that uranium recovery is not intended as a justification for the program, though it is something we should certainly give heed and consideration to; but Mr. Walthall can give you more exact details on it.

Mr. WALTHALL. In 1952, the Chairman of the Atomic Energy Commission wrote to the Chairman of the Tennessee Valley Authority and told him there was great need to develop a method of getting uranium from a certain type of phosphate material which was not then being used in any way. They asked if TVA would work on this problem. The reason for approaching TVA was that uranium was contained in this material in relatively small amounts and some chemical process would have to be developed for making other products to help pay for the process, rather than just getting uranium.

TVA started on the project and came up in the laboratory with a fairly simple process which produced a fertilizer and simultaneously permitted the recovery of uranium. We carried the process through

the pilot-plant scale and then the more we considered the process the more it became clear that this program had great potentialities because there were millions of tons of this so-called leached zone material being mined in Florida and being thrown away. This material contains almost as much phosphate, say 12 percent P_2O_5, as the other material now mined in Florida, which contains about 16 percent. But since this material was in a different chemical form, industry had not found a way to use the phosphate, or found a way to recover the uranium. We, therefore, could see that the successful development and commercialization of this type of process would not only lead to a national defense contribution in the form of uranium, but to conservation in that some 12 or 14 million tons of this material which is being thrown away every year could be made into a valuable fertilizer.

Mr. EVINS. In other words, there is a lot of waste in this area and TVA through a chemical analysis and study has found some beneficial use from this product for national defense; also the farmers of the Nation, and business and industry are profiting by your research as well?

Mr. WALTHALL. That is right.

POWER OPERATIONS

Mr. EVINS. Now, Mr. Chairman, will you turn to your financial statement and let us take a little look at your financial statement, and will you refer me to the chart you would prefer to use?

Mr. VOGEL. Probably page 130 is the table.

Mr. WAGNER. I think the table on page 130 is the power income statement.

Mr. KAMPMEIER. Or perhaps the table on page 52, if you are speaking of power operations.

Mr. EVINS. In the table on page 52, your operating income for 1955 from power was $185,880,345.

Mr. VOGEL. That is right.

Mr. EVINS. Your operating income from the same source for 1956 was $219,931,000; is that correct?

Mr. VOGEL. Yes, sir.

Mr. EVINS. And your operating income estimate for 1957 from power alone is $231,550,000.

Mr. VOGEL. Yes, sir.

Mr. EVINS. This chart indicates your expenses for the year 1955 totaled $138,367,067.

Mr. VOGEL. Yes, sir.

Mr. EVINS. Now what substantially are your main expenses in connection with the power program?

Mr. VOGEL. The main expense, probably, is the generation of power and probably comes in the purchase of coal.

Mr. KAMPMEIER. Coal and power generation are the largest single items in the expense category.

Mr. EVINS. You have an allocation in your expenses for those employees assigned to the Power Division of the Agency?

Mr. VOGEL. Oh, yes. That is kept separate on the books.

Mr. EVINS. And your cost accounting methods have been approved by the Federal Power Commission, have they not?

Mr. VOGEL. Yes. They are also reviewed by the General Accounting Office.

Mr. EVINS. They have also been reviewed by the General Accounting Office, as to your bookkeeping and accounting system?

Mr. VOGEL. Yes, sir.

Mr. EVINS. Your bookkeeping system has been commended by recognized accountants including Mr. T. Coleman Andrews, former Commissioner of Internal Revenue?

Mr. VOGEL. Yes, sir.

Mr. EVINS. As one of the most excellent bookkeeping systems of any agency of the Government; is that right?

Mr. VOGEL. I think his words were something like that.

Mr. EVINS. We have been hearing criticism of your bookkeeping methods and I think it is well to point out for the record that the Federal Power Commission has approved your system; the General Accounting Office has approved your bookkeeping methods and other individuals have also approved and commended TVA's bookkeeping and cost-accounting methods.

Mr. VOGEL. The President has also approved our system of allocations.

Mr. EVINS. With reference to your expenses that have been approved for the years 1955, 1956, and 1957, from these figures I have given you, will you please repeat for the record the income from power operations for those last 3 years?

Mr. VOGEL. For 1955, the net income from power operations actually was $47,513,278. That was the 1955 actual net income from power operation.

Mr. EVINS. After all expenses are deducted?

Mr. VOGEL. Yes. In 1956, that figure is $58,929,000, estimated. The estimate for 1957 is $58,330,000.

REPAYMENTS TO THE UNITED STATES TREASURY

Mr. EVINS. Now, General, will you please refer to your chart on repayments into the Treasury and read for the benefit of my colleagues and for the record the repayments made into the Treasury from 1948, by years?

Mr. VOGEL. Beginning in 1948, the actual and budgeted payments in sequence were $10,500,000; $5,500,000; $5,500,000; $9 million; $12 million; $15 million; $20 million, and reaching, in 1955, $50 million. Then in 1956 there is a budgeted payment of $59 million; in 1957 the estimated payment budgeted is $75 million.

Mr. EVINS. How much has been the total repayment into the Treasury from TVA's power operations over the years?

Mr. PHILLIPS. Maybe you had better put that footnote in.

Mr. EVINS. I think the full page 126 should go in, if it has not already been included.

Mr. VOGEL. I think that page has gone in the testimony already.

In 1957, with the repayment made as of that year, the total will reach $261,500,000.

Mr. KAMPMEIER. Plus payments made prior to 1948.

Mr. EVINS. Payments made from 1948 through 1957, plus payments made prior to 1948 when it was not mandatory, will total $261,500,000?

Mr. VOGEL. No, that figure is exclusive of payments made before 1948.

Mr. EVINS. How much has been paid before?

Mr. KAMPMEIER. Approximately $24 million prior to 1948.

Mr. EVINS. $24 million additional?

Mr. KAMPMEIER. That is right.

Mr. EVINS. That is $285,500,000.

Mr. VOGEL. Approximately.

Mr. EVINS. How far ahead of scheduled repayments is TVA under its authorized 40-year amortization program?

Mr. VOGEL. Again anticipating through fiscal 1957, on the basis of one-fortieth of the plant investment returned each year, there would be due for the period $150,906,648. So the difference would be an amount in excess of $110 million since 1948.

Mr. EVINS. It would be $145 million; would it not?

Mr. VOGEL. No; it would be in excess of $110 million, roughly $134.4 million.

Mr. EVINS. In other words, TVA has paid, including the present year, $285 million, which is $134 million more than required by law to be paid over the period of the amortization program.

MULTIPURPOSE PROJECTS

Did you also state, General, that the power operations are aiding in paying the other features of the TVA program?

Mr. VOGEL. No; I cannot come to that conclusion, Mr. Evins; because all allocations of multiple-purpose projects are charged, we feel, properly to each function, so that what power is paying is the power cost.

Mr. EVINS. In many of the Corps of Engineers projects we consider before this committee, we have had testimony that the power programs are paying part of the entire program and aid in paying out the other features and I feel that a similar situation exists here.

Mr. VOGEL. That does not take into account a system of allocation such as we have in TVA, under which we charge directly to each function the cost of that particular function and charge to power only that part which supports power. You can say that this is the only paying part of it from the standpoint that it is the only part that yields a definite revenue. It is very difficult to take the benefits achieved by flood control and navigation and strictly evaluate them; yet there is a definite return there.

Mr. EVINS. So this is not the only feature of your program that is a revenue returning operation; but in addition to the power program there is a beneficial return from the fertilizer program, the munitions programs and others which result in great benefits.

Mr. VOGEL. The point I am trying to make is I do not like you to throw flood control and navigation out and say they are not yielding any benefits, because they certainly are.

Mr. EVINS. I understood you to say they are not considered, and I am saying that they do yield benefits.

Mr. VOGEL. I am not making myself clear, then; because they are built on the basis of yielding benefits.

Mr. EVINS. There are many intangible benefits in addition to the tangible dollar mark in the operation of the TVA: You will say "yes" to that, I am sure.

Mr. VOGEL. I will say "yes."

Mr. EVINS. Referring back to your testimony this morning, you do not regard flood control as being solely a local responsibility; it is not your thought or plan that ultimately the counties, cities, and municipalities or local people will take over the national problem of flood control. Do you?

Mr. VOGEL. There is, of course, a local responsibility and there is a State responsibility, and we are doing our best at the present time to see that those responsibilities are properly and clearly met along with the Federal.

Mr. EVINS. Thank you General Vogel. I believe that is all at the moment, Mr. Chairman.

THURSDAY, MAY 3, 1956.

Mr. KIRWAN. Yesterday, when the committee adjourned, I think you had finished, had you not, Mr. Evins?

Mr. EVINS. Yes, Mr. Chairman.

Mr. KIRWAN. Mr. Davis?

ISSUANCE OF LETTERS OF INTENT FOR NEW GENERATING UNITS

Mr. DAVIS. To pick up a couple of loose ends before getting into your testimony of yesterday, General Vogel, when you were before the subcommittee in March, was there any mention made of the issuance of letters of intent on some major equipment on several steam electric generating units that apparently had been issued within a few weeks before?

Mr. VOGEL. I cannot recall whether specific mention was made of that before this committee. It was developed, I know, before the Senate committee, but I am not sure it was brought up here.

Mr. DAVIS. Was that because no questions were asked about it on this side?

Mr. VOGEL. I would think that would be the case; yes, sir.

Mr. DAVIS. Such letters had been issued?

Mr. VOGEL. That is true; yes, sir.

Mr. DAVIS. Would you not consider them relevant to the overall matter that was then up for discussion on this $3.5 million for the John Sevier steam plant at that time?

Mr. VOGEL. Yes; I think that is true.

Mr. DAVIS. At least they were quite relevant affecting the general question of the authority to proceed that TVA has in matters of that kind; is that right?

Mr. VOGEL. That is correct.

Mr. DAVIS. I was not able to be here at those hearings; I was in another subcommittee. You testified personally at that time?

Mr. VOGEL. I did.

Mr. DAVIS. It naturally raises the question as to how it happened that they were not mentioned to the committee at that time.

Mr. VOGEL. Again I say I am not sure that they were not mentioned. It may be that they were. Those letters of intent of course, were of such nature that they could be withdrawn with only minor penalties prior to about that date in time, as I recall. The time is

now passed, however, in the case of the John Sevier unit, when there would be no penalties attached to their cancellation.

Mr. DAVIS. What provisions do those letters of intent contain in the way of—in other words, how much of a commitment do you make with them? When you speak of penalties what do you mean?

Mr. VOGEL. Letters were issued expressing the intent of the Tennessee Valley Authority to purchase certain major equipment for additional steam electric generating units with the expectation of financing the costs from power proceeds without additional congressional approval or by means of appropriations, if the appropriations were forthcoming. These could be canceled in the case of John Sevier subsequent to November 15 only upon payment of certain stipulated costs that would be accruing during that period.

Mr. DAVIS. Was it your feeling at that time in March, General Vogel, that the TVA had existing authority to make that kind of commitment without regard to what method of financing might be decided upon?

Mr. VOGEL. My personal views in that matter differ from my colleagues on the Board, and if it is my views you seek I must tell you that I have had great doubts that the existing legislation authorized that kind of expenditure.

Mr. DAVIS. How much money was involved in those letters of intent that were outstanding as of the first of March?

Mr. VOGEL. We have a summary here which you might wish to make a part of the record, Mr. Davis.

Mr. DAVIS. Do they cover the outstanding letters of intent on this equipment for the steam plant?

Mr. VOGEL. Turbo generator, John Sevier Unit 4, in the amount of $4,539,380; boiler in the amount of $3,332,722, and structural steel $743,112. And there are 13 other items probably averaging around $100,000 or thereabouts apiece. Cancellation charge after February 29 would amount to $147,000.

Mr. DAVIS. But the total amount involved there, just as you read them off, ran something around $12 million?

Mr. VOGEL. Probably around ten or eleven million dollars. I would have to add this up to be sure.

Mr. DAVIS. Out of an estimated total for that particular project of about $28 million?

Mr. VOGEL. Yes, sir.

Mr. DAVIS. Did you have some other outstanding letters of intent of a similar kind on other electric generating units?

Mr. VOGEL. Yes, sir; there have been letters of intent issued, also, on units 7 to 10, 4 units, at Johnsonville, in the amount of around $24 million.

Mr. DAVIS. There is about, what did you say the other figure was, about 10 for John Sevier?

Mr. VOGEL. Around that. I would have to add this up to be sure.

Mr. DAVIS. For our purposes that is close enough.

Mr. VOGEL. Round figures.

Mr. DAVIS. We have round figures of about $34 million covered in letters of intent on five separate installations.

Mr. VOGEL. There are another 2 units at Gallatin, 3 and 4, on which letters of intent have been issued, running to around $20 million.

Mr. DAVIS. That brings us up to something over $50 million. Were all those seven projects that you mentioned, in your opinion were they all on about the same legal basis?

Mr. VOGEL. I think they all depend on the same basis, yes, sir.

Mr. DAVIS. These actions were taken on the basis of an opinion given to you by the General Counsel of TVA; is that correct?

Mr. VOGEL. That is correct.

Mr. DAVIS. Has that opinion been questioned? I am asking you this to your best personal knowledge. Has that opinion been questioned and, if so, by whom?

Mr. VOGEL. It has been questioned quite strongly by me and it certainly met with some question before this committee and before the Appropriations Committee of the Senate.

Mr. DAVIS. What is the status of that questioning, if that is the proper word, at the present time? The Comptroller General has been asked to rule on it, is that correct?

Mr. VOGEL. The Comptroller General was apparently asked to comment on that and I do not think he made a ruling that was responsive to the question as to whether or not it was legal, but he did write a letter, copy of which was sent to me, which indicated that he thought the matter should be considered by the Congress. I think that was about the gist of it. That letter has been read into the hearings before the Senate Appropriations Committee so that it is available.

Mr. DAVIS. Is this a proper summary up to the present time: That your personal feeling is that there is a sufficient ground for questioning the legality of this procedure so that you feel that there should be congressional clarification of it, but that your opinion is a minority opinion among the members of your board; is that correct?

Mr. VOGEL. That is correct; yes, sir.

Mr. DAVIS. We mentioned the Johnsonville plant a number of times, the steam plant there. The history of that appears to be that it was originally presented as a project of about 375,000 kilowatts. It now has a listed capacity of double that amount and apparently there is an active proposal to increase that by another 500,000 kilowatts. Is that substantially correct?

Mr. VOGEL. Yes, sir.

Mr. DAVIS. Is it also true that during these steps that were taken in increasing that capacity that all of these steps were taken on the basis of the original authorization for 375,000 kilowatts?

Mr. VOGEL. Yes; with the assumption that additions might be made, I believe, under the general authority of the TVA Act.

Mr. VOGEL. Mr. Wagner has a comment to make.

Mr. WAGNER. The TVA Act provides general authorization to install capacity as it is needed and appropriations were sought for the original installation to which you referred. Later additions, likewise financed by appropriations were made under the basic authorization in the TVA Act.

Mr. DAVIS. Where did the funds come from to make these right substantial enlargements in the project?

Mr. VOGEL. In this particular instance they would come out of power revenues.

Mr. WAGNER. Mr. Davis, the capacity that has been installed at Johnsonville up to this point has been installed with funds appropriated by Congress. The letters of intent which have been issued

on some equipment for four additional units at Johnsonville assure TVA a place on the schedule of the manufacturers and they are cancelable up until July 1 at $1.

Mr. DAVIS. Those are the four units at Johnsonville and that is the 500,000 kilowatts?

Mr. KAMPMEIER. About 540,000 kilowatts nameplate capacity.

Mr. VOGEL. Those 4 units have 135,000-kilowatt capacity each.

Mr. WAGNER. The status of the letters of intent on the two Gallatin units is the same as the Johnsonville units and as I say they assure us a place in the schedule. That assurance is necessary if the equipment is to be available and in service in time to meet the loads that are forecast for the years ahead of us.

Mr. DAVIS. I notice you have a word that appeared several times in your justifications and you just used it. When you refer to a nameplate rating what do you mean?

Mr. KAMPMEIER. That is the rating given by the manufacturer. The manufacturer says this unit should be considered to have such and such capacity and he puts a nameplate on the machine giving his name and the capacity. The reason we include that adjective, is that we always seek to get greater capacity out of the unit than the nameplate rating, and we want to make the distinction between nameplate rating and whatever ultimate capacity we are able to achieve.

For example, you mentioned that the first three Johnsonville units are considered to have a capacity of 375,000 kilowatts. Their nameplate capacity actually is somewhat less than that.

Mr. TABER. How much?

Mr. KAMPMEIER. Nameplate capacity on those three units aggregates 337,500 kilowatts, as I recall.

I believe one other point that would interest you is that TVA not only has made no commitment of money prior to July 1 of this year with respect to any but the John Sevier unit but that the securing of these letters of intent, besides providing us a place in the manufacturer's schedule, provides us a cost saving because of the fact that the bids were taken prior to an increase in prices of turbogenerators last fall. Manufacturers bid on the basis of the prices before that increase was made. As long as we are able to proceed under these particular letters of intent we are entitled to buy that equipment at the lower price.

Our only commitment—the commitment the manufacturer gets for all this—is that he having proved to be the low bidder we commit ourselves to buy the equipment from him if we buy it at all. That is what he gets for giving us the place in line and a price.

Mr. DAVIS. What is the provision on 40-year repayment?

Mr. VOGEL. The provision is that TVA will, out of its power earnings, repay the power investment derived through appropriations at a rate—and average payments would be at a rate of 2½ percent a year which will effect amortization in 40 years from the date that each respective piece of equipment goes into operation.

Mr. DAVIS. That is an average commitment of 2½ percent?

Mr. VOGEL. An average commitment of 2½ percent. We have to pay 25 percent of the initial investment within any 10-year period.

Mr. DAVIS. What is the capacity of the projected plant that the city of Memphis is building and when do they expect to have it in operation?

Mr. VOGEL. 750,000 kilowatts, I believe, is the figure and they are supposed to be producing or meeting their own needs by the first of July 1958.

RELATIONSHIP WITH CORPS OF ENGINEERS

Mr. DAVIS. What is the relationship other than the very obvious personal one here between the TVA and the Corps of Engineers in the construction of your hydroelectric facilities?

Mr. VOGEL. We have no connection there except as they are carrying on construction on the Cumberland, and in that instance we take the power from their structures into the TVA system. They build and operate those plants.

Mr. DAVIS. All other construction, then, within the TVA area is solely the responsibility of the TVA; is it?

Mr. VOGEL. Construction of the nature which is assigned to TVA; yes, sir.

Mr. DAVIS. For instance, Cheatham and Old Hickory, are those both on the Cumberland?

Mr. VOGEL. The Cheatham is on the Cumberland and Old Hickory is also on the Cumberland, at Nashville.

Mr. DAVIS. You have the complete control over the distribution of whatever hydroelectirc power is generated at those two sites?

Mr. VOGEL. It goes through the Southeast Power Administration and then comes to us and once we receive it we have the responsiability for its dispatch. Mr. Kampmeier may wish to add to that.

Mr. KAMPMEIER. In the case of those two projects the arrangements have not been completed. I believe it is generally assumed by the Corps of Engineers and Southeastern Power Administration and TVA that that will be the arrangement, but the arrangements have not actually been developed in detail.

Mr. VOGEL. However, that arrangement as described, is in effect with respect to the other hydropower installations which the Corps of Engineers is operating in the Cumberland Basin at the present time.

Mr. DAVIS. You anticipate then that TVA will get all of the hydroelectric power output of those installations, do you?

Mr. VOGEL. We are expecting so; yes, sir.

Mr. DAVIS. Do you have your own engineering force? For instance, one of the items mentioned here is a lock at the Wilson Dam.

Mr. VOGEL. We have our own engineering and construction force. Part of the work at Wilson, however, will be let out to contract, particularly the excavation.

Mr. DAVIS. Any particular reason for that, other than it just got authorized that way, that you know of?

Mr. VOGEL. It has been found by experience over the years that with a fairly sustained workload at about the same constant level that an organization can efficiently carry on its construction. That situation may change, of course, as the workload changes and as it develops large fluctuations. In TVA that has not been the case, the workload has been quite constant over the years of its existence.

Mr. DAVIS. Does TVA have its own schedule of priorities, delivery of electric power to consumers, or are they governed by the general law relating to preference customers and things of that kind?

Mr. VOGEL. TVA is guided by the Tennessee Valley Authority Act which defines the preference customers within the TVA area, those being rural and domestic consumers—I would have to refer to the Act to get the entire list.

It reads:

shall give preference to States, counties, municipalities and cooperative organizations of citizens or farmers not organized or doing business for profit, but primarily for the purpose of supplying electricity to its own citizens or members.

Mr. DAVIS. Does that language require you to provide residents of Knoxville or Memphis in priority over atomic energy installations, for instance?

Mr. VOGEL. There is a question on that. Section 10 says:

The Board is hereby empowered and authorized to sell the surplus power not used in its operations and for operation of locks and other works generated by it—

which does not make any reference to any Federal activity except TVA. Proceeding:

to States, counties, municipalities, partnership, corporations, or individuals according to the policies hereinafter set forth.

Now the part I read before follows that, indicating how preference shall be given. Section 9a, however, says, and I understand this paragraph was inserted later:

The Board is hereby directed in the operation of any dam or reservoir in its possession and control to regulate the streamflow primarily for the purposes of promoting navigation and controlling floods.

So far as may be consistent with such purposes, the Board is authorized to provide and operate facilities for the generation of electric energy at any such dam for the use of the corporation and for the use of the United States or any agency thereof; and the Board is further authorized, whenever an opportunity is afforded to provide and operate facilities for the generation of electric energy in order to avoid the waste of waterpower, to transmit and market such power as is in this act provided, and thereby so far as may be practicable to assist in liquidating the cost or aid in the maintenance of the projects of the Authority.

Under that it would appear that agencies of the United States have a lien on the hydropower which is generated but it is not so described in the next subsequent section.

Mr. DAVIS. You would interpret that to mean an agency of the United States such as the Atomic Energy Commission, for instance, would have a priority over residents of—to use the illustration I used previously—Memphis or Knoxville, would you?

Mr. VOGEL. If the Atomic Energy Commission had in fact that prior lien on hydro power, it goes without saying that it would use all of the hydro power because it is presently using 50 percent of our present output, and two-thirds of our power is generated by steam at the present time. I would say this is a matter for more profound legal interpretation than I would be able to give to it.

Mr. DAVIS. It becomes quite significant because of the rather frequent statement you hear that if we do not increase the capacity of the TVA, for instance, that we are simply going to prevent the Atomic Energy Commission from getting the power that it needs.

If the Atomic Energy Commission is an arm of the Federal Government and has a priority over some of the other present users, then that statement falls completely. Then it is the other users who would be deprived of the use rather than the Atomic Energy Commission.

Mr. VOGEL. I believe there are two divisions of this question on priority of power. One has to do purely with the use of the power and in that instance I believe I could speak for my colleagues in saying that the Board would do everything possible to provide any additional requirements of the Atomic Energy Commission. We would try to make adjustments at other places, particularly for brief periods, by reducing deliveries to industries with interruptible contracts.

The other side of the question has to do with the prices charged for power and raises the question whether that generated by hydraulic means should be sold at a lesser price to agencies of the Government rather than to domestic and industrial consumers.

There are these two facets to the same problem, you might say.

Mr. SWIDLER. Mr. Davis, since this is a legal question perhaps I should say a word on it. Of course, the TVA Act was drafted before the Federal Government was a very large consumer of electric power itself and there was no anticipation in the legislation of the kind of demands for power by the Federal Government which has developed. The TVA Act, like the other preference statutes, makes no provision for a priority for Federal agencies. That is true not only of our own act but it is true of the preference provision in the Flood Control Act of 1944 under which the Interior Department disposes of the power output of the dams constructed by the Army engineers and it is true also of the Bonneville law and the Boulder Canyon law and so forth.

The TVA Act is a regional development act and the act makes clear the intention of Congress that the power generated by TVA was intended as one of the means of accomplishing the objectives of improving the economy of the Tennessee Valley. So that all of the preferences run in the direction of regional development.

This much was included in the original act on the problem of Federal loads: There is a provision in section 20 that if Federal needs necessitated, in case of war or national emergency declared by Congress, the projects of the authority could be appropriated by the Government for national defense needs upon payment of compensation to any customer of TVA whose power contract was affected by that action of the United States. That takes care of any emergency situation, but the act does not provide that the units which have been installed and committed to the power needs of the area may be diverted at will to the service of a new Federal use which might appear upon the scene.

Mr. KAMPMEIER. To round out the picture, I believe there is one more point you will find of interest, and that is that the AEC is protected also by long-term contract with us on those amounts of power which AEC has indicated it has continuing permanent use for.

FLOOD CONTROL

Mr. DAVIS. Changing the subject a bit for a few odds and ends now, what can you do about preventing a flood-control problem from developing? I believe you mentioned that in connection with one city, where they are threatening to move right into a flood plain. What can you do about that?

Mr. VOGEL. In the case of that city nothing can be done because they have already moved in. That is an accomplished situation. In other instances, where the city has not spread itself into the lands adjacent to the stream, if the possible threat—the extent to which waters may rise—is pointed out, often they can be persuaded against building houses and similar developments in the danger areas, using those areas instead for parks, playgrounds, parking areas, and that kind of thing.

Very frequently, when those alternatives are pointed out, the city develops along those lines and considerable money is saved as a result of having avoided a costly mistake.

Mr. DAVIS. Off the record.

(Discussion off the record.)

Mr. DAVIS. All you can do, then, is to warn them of a dangerous situation and to suggest nonresidential uses for areas of that kind?

Mr. VOGEL. Yes, and in that connection, where that was done recently with one city in Alabama we received quite a violent reaction. We were asked to withdraw the report, that it was going to be bad for business. We felt compelled to maintain our position on the basis of the engineering data which had been obtained.

FERTILIZER PROGRAM

Mr. DAVIS. To move to another subject. What is the authority for the fertilizer program? Is that written into the original law?

Mr. VOGEL. That is part of the basic act, yes, sir. I can ask our legal counsel to point it out to you.

Mr. DAVIS. Is it written in the original act?

Mr. SWIDLER. Yes, sir, especially in section 5.

Mr. DAVIS. What is the present policy as to who gets the fertilizer and who does not?

Mr. VOGEL. The first purpose of the fertilizer program is to develop research to determine more effective kinds of fertilizer so we get it into hands of people who can assist in our research activities and we also put it into the hands of farmers at reduced cost as a part of the farm demonstration program. I think to go beyond that in more detail, that I would let Mr. Wagner take it up.

Mr. WAGNER. The fertilizer that goes into the test demonstration program is roughly 5 percent of our total production. The farmers who get that fertilizer are selected by their neighbors and that program in 1957 is planned to be conducted in 31 States. The approximately 95 percent which is sold in the educational sales program can generally be bought by any farmer who will agree to use it in the ways prescribed for it.

Mr. DAVIS. How does he get it? He does not get it directly from you, does he?

Mr. WAGNER. He goes to a fertilizer dealer or farmer cooperative who has a contract for distributing it.

Mr. DAVIS. I think basically what I am getting at is: Who gets the contract for distributing and who does not?

Mr. WAGNER. There are a number of cooperatives which have contracts. They were selected to distribute this fertilizer in the very early days, Mr. Davis, when there was just a test demonstration program. At the very beginning TVA distributed this fertilizer free,

and the farmer paid only the freight. It was distributed through farmer associations and cooperatives. As we moved on into a program where the farmer was paying for the fertilizer these same cooperatives were taken on as distributors.

More recently, we have also added private industry firms—about 15 major concerns. They are selected by TVA on the basis of their expression of interest in participating in the program, and their willingness to conduct the kind of an educational program which we require for this fertilizer. We also select them to give a reasonable geographic coverage of the States in which the program is conducted.

Another factor considered is that there are some companies which have special features about their operations that make them well suited to assist in carrying out the kind of an educational program that we conduct.

Mr. DAVIS. Maybe that has to be in rather general terms, but how does a Member of Congress explain to phosphate company A that he just cannot get any of these fertilizers for distribution, but phosphate company B just across the State line, we will say, has a lot of it and his prestige is considerably enhanced thereby to the detriment of company A?

If you were in my position and had that question raised, how would you answer it?

Mr. WAGNER. In the first place, we produce only a very small percentage of the fertilizer that is produced in this country, so we cannot put it in the hands of every dealer and distributor in the country. We cannot contract with every distributor who wants the material. If a distributor or dealer is going to do a good job he has to get enough of the material to make it worth while. He is required to carry out quite a program, to set up meetings with farmers, to have a certain type of staff available to carry out the educational activities, and so forth. So that if it is going to be worth while for a distributor to go into the program, he must have a reasonable amount of material.

The only thing I can suggest you might say to phosphate company A is that the end result of this program has been to increase the sale of all fertilizers, so that while fertilizer dealer B may be selling TVA fertilizer it is sold for specified uses only. As farmers adopt these new uses and others follow their example, the total market for fertilizer is built up and fertilizer dealer B should sell more fertilizer.

Mr. DAVIS. There are no fixed criteria that would enable me to say to this fertilizer dealer "as soon as you conform with these criteria you will be able to get that experimental fertilizer, too"?

Mr. VOGEL. No, but if he agreed to conform to those various restrictions, we certainly would be willing to give consideration to putting him on our list, if it could be accomplished without detriment to the program. But certainly we do not want to expand to the point that we would be doing more than running a pilot program here. With our production of only about 2 percent of the United States production, I do not think we are doing more than that.

Mr. WAGNER. As you perhaps know, Mr. Davis, our educational sales program and test demonstration programs are both active in the State of Wisconsin at the present time.

Mr. VOGEL. Off the record.

(Discussion off the record.)

Mr. DAVIS. Now getting into another general problem—and I have been taking more time than I had intended—here are four things that I think fall into one general area of study that I would like to get your comments on. I picked them out from the justifications. For instance, here is Economic Analysis of Valley Agriculture; another one Soil Survey; another one Research on Forage Crops and Animal Industry; another one Tributary Watershed Development. I think in each of the cases where they are referred to in the justifications, mention is made of cooperation with the Department of Agriculture and the various agencies of that Department. But it gets down to a question as to why we should appropriate money to TVA for those things that we all recognize the Department of Agriculture is doing in all parts of the country—at least in those that are important agricultural States, such as the State of Wisconsin, for instance. I recognize those activities are being carried out through the Agricultural Extension Service, or some other agency of the Department; but why should we make separate appropriations to TVA in that field of activity?

Mr. VOGEL. I think it gets down to the point that the Tennessee Valley Authority Act envisioned doing all of those things which were designed to improve the economy of the region. And perhaps the same question could have been asked as to why TVA undertook flood control and navigation problems that were inherent in the river when that work is done in other parts of the country by the Corps of Engineers.

This was intended to be an area in which all things pertaining to its resource development should be accomplished by one organization. And therein is the difference between the way things are done here and elsewhere in the country.

I said yesterday, and it is an observation that I made some time ago, that the great value of this is that it has established a pattern of cooperation that we are moving toward more and more by the employment of other agencies of the Government in conjunction with each other. In other words, it has really pointed the way to integrated basin development programs that are going on under coordinated efforts of the different agencies.

Mr. EVINS. Do we not, General, have a similar pattern with respect to the Bureau of Reclamation projects in the 17 Western States that are identified as reclamation States? That act does not apply to all 48 States; it only applies to the 17 Western States to be developed as reclamation States.

Mr. VOGEL. That is true, Mr. Evins. I would think there, however, that the intent was more to limit the extent of the Bureau's activities to those regions where they are more necessary, rather than to bring about an integrated development of the region.

Mr. WAGNER. I would like to add one further point, if I may. The studies of the type you refer to as made in TVA are generally concentrated upon some problem that is peculiar to the agriculture of the region. They are also generally conducted in cooperation with the State college, in an effort to assist and encourage them to focus greater continuing efforts on those problems. And that result has been accomplished in many cases.

A further point is that the total expenditures which result in the region are generally not greater than the average for the whole country. For instance, for the period from 1934 to 1953, the Federal expenditures for land and agricultural resources development per member of the farm population for that total period was $1,228 in the United States as a whole and, in the Tennessee Valley, only $707 including both the expenditures of the United States Department of Agriculture and the TVA expenditures.

Mr. DAVIS. Let me ask you this: Does practically every county in the TVA area have a county agricultural agent, for instance?

Mr. WAGNER. Yes, sir.

Mr. DAVIS. Are most of the counties in that area organized in soil conservation districts?

Mr. WAGNER. I think the proportion is somewhat less than in most sections of the county; but there are a number of them.

Mr. DAVIS. Then I guess it boils down to this: Do they rely on TVA for doing a lot of things that they otherwise would have to spend money to do themselves if it were not for the help they were getting from TVA? Is that generally true?

Mr. WAGNER. No, sir; I think that is not the case. TVA generally has concentrated on problems peculiar to the region. We have set up studies jointly with the colleges and, in most cases they have agreed to spend money to participate in those studies which otherwise they would not have spent.

You mentioned the study on forage crops for example. I believe the justification document shows that we will conclude our participation in that project in 1956; but the experiment stations involved—in North Carolina, Georgia, and Alabama—are going to continue their research in that field without financial aid from TVA.

TOPOGRAPHIC MAPPING

Mr. DAVIS. I have some of the same kind of questions in respect to the mapping service you furnish the Army. I thought your old outfit took considerable pride in their mapping work. How does it come that they are getting TVA to do it for them down in that area?

Mr. VOGEL. I think that probably came about during the war, when a large mapping program was necessitated and help was solicited from almost every source, and TVA undertook to map quite large areas and has continued, because it has a very excellent although small section to do this work. And I do not believe there has been any particular conflict with the desires of the Army in that connection.

Mr. SWIDLER. These maps you refer to are not maps of the Tennessee Valley; they are maps of areas picked by the Army.

Mr. DAVIS. They are not maps of any part of the Tennessee Valley area?

Mr. SWIDLER. No, sir; I do not believe they include any part of the Tennessee Valley area.

Mr. WAGNER. The mapping done on a reimbursable basis for the Army is general military mapping and while TVA's part of the mapping job is for maps of this country, many of the mapped areas are foreign assignments where we are given certain basic data and asked to prepare maps. The Army is very well satisfied with the job they

have gotten and it has been an efficient and economical way for them to get the maps, as I understand.

Mr. DAVIS. At the present time, then, it has no connection with the TVA operation at all; is that correct?

Mr. WAGNER. We have a mapping force which was originally established to do mapping work in the valley. It is continuing to do TVA's work, too, and in addition with the force available, and the equipment available, it has proved to be a convenient and economical place for the Army to get some of its special maps made.

Mr. DAVIS. Then if we see a TVA man over in Morocco and ask him what he is doing there, he would probably state he was making maps for the Army?

Mr. WAGNER. I think we have not sent personnel abroad, but the Army has furnished us with the basic data, photographs and that kind of information, from which the maps have been compiled.

BOND REDEMPTIONS

Mr. DAVIS. I notice in the previous fiscal year and the current fiscal year, in your statement it shows $15 million and $14 million, respectively, for the retirement of bonds. Nothing of that kind is shown in the 1957 fiscal year. What is the explanation and the significance of that?

Mr. VOGEL. The bonds are all now retired. That completed the program.

Mr. DAVIS. Were those bonds issuances that were specifically authorized by Congress?

Mr. VOGEL. Yes, for specific purposes.

Mr. PHILLIPS. They were in connection with the original establishment of TVA.

PAYMENTS IN LIEU OF TAXES

Mr. DAVIS. Another item is payment in lieu of taxes. To whom were those payments made?

Mr. VOGEL. States and counties and municipalities in which the electricity is sold. It amounts to a percentage of all sales except those to the Federal Government, a total of 5 percent.

Mr. DAVIS. In lieu of taxes—real estate taxes; personal property taxes?

Mr. VOGEL. In lieu of State and county taxes, whatever they might be; primarily, I presume, property taxes.

Mr. DAVIS. And there is a definite formula by which the amounts are arrived at?

Mr. VOGEL. Yes. At this time the total amount distributed is 5 percent of gross sales, exclusive of sales to the Federal Government.

PAYMENTS TO UNITED STATES TREASURY

Mr. DAVIS. It is indicated somewhere in the justifications that there has been a change in the payment arrangement since 1948. What was that change and what was it based on?

Mr. SWIDLER. I think you are referring to the provision in the Government Corporation Appropriation Act of 1948 setting out this 40-year payment scheme on the power investment. There has been no change since in the tax equivalent payments.

Mr. DAVIS. It was changed in 1948 when the 40-year payment system became effective?

Mr. SWIDLER. Yes, sir; a schedule for cash payments to the Treasury from power proceeds was established in 1948.

Mr. DAVIS. What was the situation prior to that?

Mr. SWIDLER. Prior to that time the amount of the payment was in the discretion of the TVA Board, except so far as it was governed by bond maturities. Section 26 provided that TVA should turn into the Treasury the proceeds from power and fertilizer operations and miscellaneous operations, except to the extent required to carry on the power and fertilizer activities. There was a general standard but no fixed repayment requirement, although payments were made.

The 1948 act provided a formula for determining the minimum payments which were required.

Mr. KAMPMEIER. Minimum payments and total payments. The total payments are required within 40 years. Minimum payments in any particular year are considerably smaller.

Mr. DAVIS. That is all.

Mr. EVINS. It was pointed out yesterday that some $24 million was paid back into the Treasury prior to the enactment of the 1948 act—requiring repayments—and, since that time, total repayments by TVA together with the $24 million were something like $288 million.

Mr. DAVIS. I recall the testimony yesterday, but I thought the act had been changed since 1948 and I did not know what it was based on.

Mr. PHILLIPS. As Mr. Evins just pointed out the chairman inserted yesterday in the record the items on page 126 of the justifications showing the payments made by the Tennessee Valley Authority and actually the situation was—and I think, General, you will confirm this—that for the first 14 years of TVA's operation, when the matter was left to the discretion of TVA itself, $15,060,000 was repaid to the Federal Government on an investment at that time which must have amounted to how much?

Mr. KAMPMEIER. I would like permission to look that up and put it in the record.

Mr. PHILLIPS. Just put that in the record.

(The information follows:)

Through June 30, 1947, TVA had paid from power revenues, $15,059,019 into the general funds of the Treasury plus $8,572,500 in redemption of bonds, or a total of $23,631,519. The investment of appropriated funds in the TVA power program, plus properties transferred, as referred to in the Government Corporations Appropriation Act, 1948, was $348,239,240.

Mr. PHILLIPS. At the same time, the item referred to by Mr. Davis was also paid, which was $8,572,000 on the bonds which were created at the time TVA was created, and used for the purchase of the Tennessee Electric Power Co.

PAYMENT OF INTEREST

Now, the point I want to make—I do not challenge those figures at all; they are accurate, but I think, whenever those figures are given, it should also be pointed out and put in the record that no interest was paid and, if interest had been paid at even simple interest of 2.5 percent, which is approximately what the Federal Government paid

for the money it borrowed to subvent to TVA, the interest payment would have run to $210 million, just at simple interest. So that in the payment to the Federal Government of $186,500,000, including 1955, interest alone which was not paid would have been $210 million. Or, in simple language, TVA has not been paying enough to the Federal Government to underwrite the interest which the Federal Government paid on the money it borrowed for TVA. And that is at simple interest. The Federal Government pays, in effect, compound interest; because we have to borrow money to pay the interest on the national debt and to borrow more money to pay the interest on the money we have already borrowed. And had TVA paid interest at the rate the Federal Government actually paid, it would have paid $240 million. And the TVA will have paid back at the end of the current fiscal year 1956, $186,500,000.

So the picture is not as rosy as it may have been painted in the hearings yesterday.

I would like to go a little step further, because I do not think TVA wants, nor do I think these records should be made without calling attention to the fact that repeatedly in the 1936 hearings when the TVA was set up, Mr. Lilienthal, testifying in behalf of TVA, insisted that not only would TVA pay for itself, but would pay 3.5 percent interest. And Mr. Taber, who always likes to get things accurate, said "It is 3.5 percent for interest?" and Mr. Lilienthal replied "3½ percent." Mr. Taber said "And how much for taxes?" and Mr. Lilienthal said, "One percent of the property." Mr. Taber said "What about these allotments to the States on the gross?" Mr. Lilienthal replied "They are included in that tax item."

I am reading from the House hearings on the first deficiency appropriation bill, 1936, in the 74th Congress, 2d session, 1936. I think I might as well say right here, for the benefit of my good friend from Tennessee, Mr. Evins, while I am perfectly willing to agree with him, regarding flood-control payments and reclamation payments, that it is the custom for the United States to pick up the check on a lot of those, there are two things that should be constantly kept before this committee and before TVA; first, that all over the United States municipalities do cooperate; they do pay something on many of these projects; but I also go back to the first deficiency bill of 1936 and again quote Mr. Lilienthal's statement of what the TVA said it was going to pay when it asked for a charter, as it were, from the Federal Government. I quote:

> I hope the committee will observe since we are planning to liquidate all of the capital expenditure for flood-control and navigation, it is extremely important that we be given an opportunity to market all of the power so as ultimately to liquidate the investment. He said, You will note we expect power revenues to liquidate the entire investment in 50 years and to be on a self-supporting basis soon after the construction period is over.

And I can support that with the figures which he submitted to Congress at that time, which included all of the cost of flood control as well as power construction, navigation, and everything else. And after setting up a balance sheet for Congress it was shown that TVA would have an annual net of $9,750,000 to amortize or to liquidate all of the costs of TVA.

My point is, that I think whenever we put in, Mr. Chairman, a list of repayments of TVA, we should also be careful to point out the deficit of TVA when it comes to providing for simple interest which

is being paid on that money by the taxpayers of the United States. If I were to make it 3.5 percent, the clerk just points out, as Mr. Lilienthal suggested, simple interest would have been $295 million and compound interest would have been $355 million. And if we were to include the Federal, State, and local taxes on the same basis other utilities have to pay them, the deficit figures would be still higher.

The point is that TVA, as of this moment, has not paid enough back to the Federal Government during its life to pay interest on the money borrowed by the Federal Government to subvent to TVA.

Mr. EVINS. In fairness I am sure my colleague must admit that in the earlier years when there were not any payments being made, those were the formative years of TVA and subsequently the situation has been altered by the Federal Government through the Atomic Energy Commission, the guided missile program, and the Air Force and other defense agencies making demands on the TVA for power supply. I think they all should be included there as an expense upon TVA power operations and, consequently, when credited, the balance sheet for TVA is very excellent.

Mr. PHILLIPS. Whenever my friend from Tennessee can go down to his local bank and borrow money and say to the bank "These are my formative years, so I will not pay interest for 20 years, and then I will begin to pay interest"—when he can do that, I will accept his statement.

Mr. WHITTEN. On that, to make the record complete, I do not have any idea of reconciling my views with those of my friend from California, but TVA is Government owned. The gentleman refers to it as something that will be liquidated. TVA was created and set up as a corporation and, as a corporation, it was given certain authority to operate as a corporation, but all of its physical assets and all of the things that TVA owns belong to the Federal Government. The point I make is that the repayments we have participated in are a matter of declaring cash dividends to the Government on what the Government owns. Such amounts could well be termed "interest." And what the gentleman (Mr. Phillips) claims the Government pays for money, I think his rates are a little high. I think the average Treasury cost of money is around 2 percent.

Mr. PHILLIPS. Those rates are what we have been paying for long-term loans; we have been getting short-term loans for less than that, as you indicate, I took the actual amount we are paying for long-term loans. And as to who owns TVA, I do not mean to imply that we do not own TVA, but I do mean to imply that it is a utility set up to serve a particular part of the United States, and for anyone to say at the end of the time period, when it has paid out, its facilities are going to be owned by all of the taxpayers of the United States is, in my opinion, stretching a point, because the people who would be benefited are only the people in the area in which TVA lies. I think there cannot be any argument between Mr. Evins, Mr. Whitten and myself, as to that. I think the objective ought to be to put TVA in a status which would enable it to operate as any utility does and, when it does that, I think that the first thing you should do—I am talking about interest, that is all—I think you ought to pay interest and I have a lot of my friends down in that area who are inclined to agree.

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Mr. WHITTEN. I realize there is a clash of interests and a clash of publicity between the forces having one line of thought, and another. The point I make is that at the time this provision was written on repayments to the Government, it was never contemplated or described as interest, though it easily could have been, but the contemplation, as I recall, was that TVA was a creature of the Congress; that it had been created by it and cash dividends were in order in addition to increasing the value of the Government's corporate property. So, at the end of the 40 years, in addition to whatever assets there are, which belongs to the Government you will have had cash returned to the amount of the initial Government investment in power.

Mr. PHILLIPS. I am not quoting some antagonist of TVA; I am quoting one of the high priests of TVA who says TVA expected to pay 3½ percent. He calls it interest, and I call it interest, too.

Mr. VOGEL. May I comment on the matter of interest, which may help?

Mr. PHILLIPS. A little payment would help, more than any comment.

BOND FINANCING PROPOSALS

Mr. VOGEL. As you know, the Tennessee Valley Authority Board submitted and approved a plan for self-financing by the sale of revenue bonds and, since that time, a number of versions of that bill have appeared. I think it is notable that in all of the versions provisions are contained for the payment of interest to the United States; so that it would appear to be a question that is fairly well agreed upon.

Mr. PHILLIPS. I thought it was, and I am just pointing out the tail that ought to go along with the kite.

BENEFITS DERIVED FROM TVA

Mr. EVINS. In connection with your other remarks, I wonder if the gentleman from California might amend his remarks to include the national defense, also.

My colleague, Mr. Phillips, stated in substance that only the people in the area benefited from TVA, and I ask you would you not amend your statement to include also the national defense.

Mr. PHILLIPS. My reply was to Mr. Whitten, who said that 40 years in the future the people of all the United States were going to own the power facilities in the TVA area, and my contention is that that benefit will be primarily to the people who live in that area. That is, you cannot benefit the people in California, nor the people in Chicago, nor the people in Portland, Maine, by power facilities which you contend we own in the Tennessee Valley. I am not so sure that bringing the Reynolds Metals Co. down into the Tennessee area, when they intended to build their own powerplant at another place, can be said to be beneficial to the Atomic Energy Commission, or the Nation.

Mr. Evins. But the gentleman will recognize the national defense importance?

Mr. PHILLIPS. I definitely recognize the national defense importance. We have national defense projects in California.

Mr. WHITTEN. Like a good lawyer, he expounds his version of the facts which lead to his conclusion. I would personally differ as to the facts which lead me to a different conclusion.

Mr. PHILLIPS. Not being a lawyer, I cannot speak from experience; but I understand that is why they have judges.

Now, if I may turn to another little difference between the testimony yesterday, and the previous testimony on the part of my friend from TVA, if you will turn to page 324 on the Public Works Appropriation for 1956, which was in May of last year, I had a little colloquy with the General (Mr. Vogel) and Mr. Wessenauer tried to point out I was not accurate, in a very nice way, and then submitted for the record at Mr. Rabuat's request, 4 or 5 inches of very fine print, in which he admitted I was right. But he had it so involved in language that it is very difficult to draw that conclusion without careful study. The point was that in 1955 the drawdown expected in the capacity of the systems of the hydroelectric plants, the difference between that and the drawdown allowed for drought, between that and the median year, was 200,000 kilowatts, and that was the amount allowed by TVA for possible loss as a result of drought or any other demand upon it. In 1956, it was also to be 200,000. I have the figures here right before me—your figures. In 1957 the estimate was to be the same thing.

Now when you come in today, General, you come in with a margin—I think it is on page 12 in this book—you come in with a margin of 375,000 kilowatts difference. In other words, in 1957, having given us a figure a year ago of a difference of 200,000, for 1957, less than a year later, you give us a difference of 375,000 for safety and, in 1958, another 375,000.

There are two things about that. First, you speak about the nameplate capacity. I take for granted that is the capacity shown here, the nameplate capacity, or the nameplate capacity plus 10 percent. Which is it? Is it the nameplate capacity plus 10 percent, or the actual nameplate capacity?

Mr. KAMPMEIER. I must confess you have me a little confused. Before I answer, I want to be sure that I am looking at the same figures you are.

Mr. PHILLIPS. I am looking at page 12. My contention is that the estimate of shortage is actually not the real shortage but just an encroachment on your normal reserve; because if you used 200,000 kilowatts as the difference in capacity between median and adverse flow conditions and allow for the potential capacity above the nameplate capacity, you show a deficit of 127,000 kilowatts, on the basis of which you are asking Congress to appropriate money for additional units, when actually you do not have any deficit; you have a surplus of 48,000 kilowatts for 1957 and a deficit of 100,000 kilowatts for 1958 instead of 257,000 kilowatts.

Mr. KAMPMEIER. I believe you are working under some misapprehensions; but, in order to be sure that we are talking about the same thing, let me check 1 or 2 points.

I assume when you speak of the defiiciency of 127,000 on page 12 being an actual surplus of 48,000, you arrive at that figure by deduction of 127 from 175.

Mr. PHILLIPS. That is correct.

Mr. KAMPMEIER. And the 175 you obtain by deducting 200 from 375.

Mr. PHILLIPS. That is correct.

Mr. KAMPMEIER. And 375 is the figure which is indicated approximately as being the allowance made for loss of hydro capacity under adverse conditions.

Mr. PHILLIPS. That is correct.

Mr. KAMPMEIER. Indicated as approximately three-quarters of 500,000, or thereabouts.

Mr. PHILLIPS. That is correct. And in the preceding years, the figure was shown as 200,000.

Mr. KAMPMEIER. That, I think, is a misapprehension. The 200,000 you are comparing with that, I take it, is the 200,000 referred to on page 324 of last year's hearing.

Mr. PHILLIPS. Correct.

Mr. KAMPMEIER. Which is the figure at the end of the paragraph in the middle of the page.

Mr. PHILLIPS. That is correct. It really is a subtraction in the paragraph beginning "I am quoting." If you deduct one from the other, you get in each case 200,000.

Mr. KAMPMEIER. But what I wish to bring to your attention is that you are deducting figures to obtain an item which is not the same item we are talking about on page 12 of the justifications. The figures on page 324 of last year's hearing indicate that as between the capacity available with the reservoirs drawn down under median year conditions, and the capacity when they are further drawn down under adverse conditions, there is a difference of approximately 200,000 kilowatts.

Mr. PHILLIPS. Does not that compare with your 375,000?

Mr. KAMPMEIER. No, sir. Both figures of capacity on page 324, the figure for the median year, as well as the figure which assumes adverse conditions, reflect some drawdown, some loss of capacity. The figure shown, for example, for the median year is after allowing for the amount of drawdown, the amount of loss of capacity, that is experienced in a median year, and that is part of the 375,000 kilowatts.

Mr. PHILLIPS. I wish you could show me that anywhere, or point that out in yesterday's testimony, that that is what you said it was.

Mr. KAMPMEIER. Yesterday's testimony did not deal at all with median year conditions, or the difference in conditions between a median year and a dry year.

Mr. PHILLIPS. It dealt with the most adverse conditions.

Mr. KAMPMEIER. No. As I pointed out yesterday, that 375,000-kilowatt allowance was not intended to cover the most adverse conditions; it was intended to be an allowance which was a part of the loss experienced under the most adverse conditions. It was not a reduction below any capacity figure which in itself reflected a reduction, such as the median figure on page 324 of last year's hearings, but a reduction below the maximum capability of the machines with no drawdown of the reservoirs.

Mr. PHILLIPS. Without considering anything above the nameplate capacity?

Mr. KAMPMEIER. After considering the full capacity over and above the nameplate rating.

Mr. PHILLIPS. I do not want to question your statement, Mr. Kampmeier, but I find it very, very difficult to accept your statement. Can you put it down some way that I can read it and put it in the

record; because I cannot accept that statement. Here where you have a nameplate rating and you have a capability beyond that, and you have a 200,000 allowance here and a 375,000 allowance, and then to say that 375,000 still does not include the capability above the nameplate rating, is hard for me to accept.

Mr. KAMPMEIER. The 375,000 is a reduction from maximum capability, which does include the capacity over and above the nameplate rating. And the reduction of 375,000 is from that maximum capability figure.

I think it would be best if I tried to write this out.

Mr. PHILLIPS. It is a reduction down to what?

Mr. KAMPMEIER. The 375,000 brings the figures down to what we have indicated is the amount of capacity we feel can be considered normally to be available, assuming all of the units were in operation, but allowing for the fact there will be some drawdown. The 375,000 is deducted to make reasonable allowance for drawdown, so that the resulting figure, after we deduct the 375,000, indicates the capacity that would be likely to be available under those conditions.

Mr. PHILLIPS. Wait a minute; what do you mean; under what conditions?

Mr. KAMPMEIER. Under a set of conditions that could be considered to be reasonably typical.

Mr. PHILLIPS. That is your median?

Mr. KAMPMEIER. No; this is not actually the median; it is between the median and the adverse.

Mr. PHILLIPS. Is not this something new in the calculation both as to the nomenclature as applied by utility practices, and the standard utility practices, that you should have a median and then some new and nebulous point between median and the most adverse condition?

Mr. KAMPMEIER. I think not, sir. It was based on language which Mr. Green helped to develop when he was with the Federal Power Commission, applying, as clearly as we can understand it, FPC's definition of the term it calls "dependable capacity" and that term is supposed to be the measure of the amount of capacity which can reasonably be expected to be available at the time of the maximum system demand assuming that all generating units are in service. It does not say "under median conditions;" it does not say "under the most adverse conditions."

Mr. PHILLIPS. It says under the most adverse conditions.

Mr. KAMPMEIER. I do not recall it that way; but I would be glad to check that.

(The information requested is as follows:)

HYDRO GENERATING CAPACITY—TVA SYSTEM

The nameplate capacity of the hydro plants in the TVA system at the end of 1957 is scheduled to be 3,739,235 kilowatts. With favorable water levels, the capacity would be greater, the increase for a typical hydro plant being 3 or 4 percent (as compared with about 10 percent for a typical steam plant). However, during the high-load season (generally November through February) the capacity of the hydro plants is reduced at all times by the drawdown of the tributary reservoirs (required, in part, for flood control) and most of the time also by high-water head reduction at the main-river dams.

The hydro capacity available during the high-load season is constantly changing with streamflow and reservoir conditions. The total hydro capacity would rarely be the same on 2 consecutive days. Hence any figure of the hydro capacity that should be expected to be available to help meet the maximum system load

can only be an approximation based on reasonably typical conditions. In reporting estimated "dependable capacity" of the hydroplants to the Federal Power Commission TVA assumes drawdown of the reservoirs to about 10 percent of the storage space above their normal minimum levels, and no high-water head loss at the main-river dams. For the system now scheduled at the end of 1957 the resulting capacity figure is 3,425,000 kilowatts. The reduction that this represents from maximum capability under favorable conditions is roughly three-fourths of the reduction that is experienced with more extreme drawdown or with severe high-water head loss, under either of which conditions the capacity may be in the range of 3,250,000 to 3,350,000 kilowatts.

On the other hand, if streamflows were consistently at a median level throughout the winter, the hydro capacity at time of system peak load (depending to some extent on when in the winter the maximum demand occurs) probably would be in the range of 3,500,000 to 3,600,000 kilowatts.

As a convenient approximation, it is assumed (as in the figures appearing on page 324 of last year's hearings) that a typical capacity figure at the probable time of system peak load is 100,000 kilowatts higher with median streamflow and 100,000 kilowatts lower with adverse streamflow, than the reported "dependable capacity." It will be noted, however, that all these figures of available capacity during the high-load season are several hundred thousand kilowatts less than the maximum capability during the summer with favorable head conditions.

While "dependable capacity" implies at least relatively adverse conditions, TVA has seen fit, as permitted by the FPC definitions, to assume something less severe, as indicated above, than the most critical conditions, "treating such abnormal limitations as an emergency condition to be covered by the reserve capacity."

Mr. PHILLIPS. I am reluctant to pursue this on the basis of time any further and I am about as confused on this particular subject as I wish to be in 1 afternoon on any 1 subject. I think we will let Mr. Green check up on the nomenclature of the Federal Power Commission and if Mr. Kampmeier will put this down into writing, I can read it and maybe understand it; so I will go to another subject.

(Note by Mr. Phillips, submitted subsequently:)

Inquiry to the Federal Power Commission confirms my statement in the hearing that the FPC's instructions for determining dependable capacity uses the words "under the most adverse streamflow conditions of record."

COAL BUYING POLICY

Mr. PHILLIPS. I would like to go back briefly to the coal situation. I suspect, unless Chairman Kirwan corrects me on this, that I am probably the only member of this committee who ever worked in a coal mine. Mike, did you work in a coal mine?

Mr. KIRWAN. Yes, I started out by working in a coal mine.

Mr. PHILLIPS. I thought probably you had; so you and I have both worked in a coal mine. I had hoped we were done with this last year, but I think we have some points here that are not yet cleared up and I quote from page 10 of the Tennessee Valley Authority Act, subparagraph b of section 9:

All purchases and contracts for supplies or services, except for personal services, made by the Corporation, shall be made after advertising, in such manner and at such times sufficiently in advance of opening bids, as the Board shall determine to be adequate to insure notice and opportunity for competition.

If you will keep in mind those terms "adequate to insure notice and opportunity for competition," I would like to point out to you that only yesterday the witnesses testified that bids were taken; that generally speaking they were given to the low bidder, although that is not required in the act, and then point out to you that a couple of years ago the Independent Offices subcommittee made an investiga-

tion of this subject. I think it was testified yesterday, when Mr. Rabaut was presiding, that the contracts were made with coal-mining companies. I am afraid for the moment that the witness neglected or overlooked the Bransford case. Do you remember the Bransford case?

Mr. KAMPMEIER. I recall the Bransford case.

Mr. PHILLIPS. Mr. Bransford submitted a financial statement which showed a net worth of over $50,000; although the Bransford Coal Co. that was awarded the contract was a new $10,000 corporation. Bransford Coal Co. furnished a statement that they were producers when actually they were only brokers who had a contract with an owner of a mine to sell to TVA. And the question was asked by a very distinguished member of this committee, a personal friend of Mr. Evins, "Do they have a right to mine coal" and the answer of TVA was "Not that I know of." Then the question was asked "Do you think they did misrepresent themselves as producers," and the answer was "Yes." Then the question was asked "Did it occur to you at that time" and the answer of the TVA witness was "No, it did not." The question was still asked by the same member of the subcommittee "Do you think that is an error in contract?" and the answer was "Yes."

I think when you come in and say you require bond and deal only with people who are responsible, and deal only with mine owners, you have a shorter memory than we.

Mr. KAMPMEIER. If there was a question yesterday whether we deal only with mine owners, the answer should have been "No." We certainly did not intend to say otherwise.

Mr. PHILLIPS. The record can be corrected.

Mr. PHILLIPS. Now, regarding the bonds which I think is rather important—and this I am serious about—the TVA witness said: "Where we have had no experience with the man, and we do not know what his reputation is, and cannot find out from financial statements, we require bond."

Then I asked: "Could you be specific on how many of these you have actually required bond?" The witness did not know, but he supplied it for the record, and I read it literally:

"Bonds were required in 8 of the 30 cases. They would have been required in some additional cases, including the Bransford case, except that the requirement was waived by TVA in the course of negotiating lower prices than were bid originally."

I ask you, General, to compare that with the requirement in the law which says that while you do not have to accept the lower bid, the Board shall determine the method of bidding to be adequate to insure notice and opportunity for competition.

I ask now, as I have asked before, how you can have competitive bids when you can take a low bidder and then change the terms of the contract and require him, by twisting his arm somehow, to bid a lower bid through making a little deviation in the original advertised contract.

Have you ever done that? Have you ever made any changes in the advertised bid after bids were opened and given to a low bidder in order to negotiate a lower bid with him than he had bid in writing?

Mr. KAMPMEIER. Shall I respond to that, General?

Mr. VOGEL. I think you had better do so. I cannot give you any specific case from memory. However, it would seem to me that that is a procedure which is followed not infrequently in Government dealings when advertising has been made, and bids have been received and none are considered to be within the range which is acceptable and that then at that point negotiation is permissible.

Mr. PHILLIPS. General, I would be completely in accord with what you say and I would offer you many of the military contracts as examples but, unfortunately, I think when you go back home and check into this, you will find that the changes in the contracts have not been minor changes. They have been what you and I would call major changes.

Mr. VOGEL. Have any of these been fairly recent that you know of?

Mr. PHILLIPS. That I cannot say. This testimony is contained in a previous hearing. As I said to you yesterday, if the witnesses had come in here and admitted to me that in the case of the stockpile that you actually had made a number of mistakes, but that you are trying to correct them and that you really did have, as the Federal Power Commission report says, 16 days coal at the Kingston plant on the 1st of February; 8 days' coal on the 1st of March and 12 days' coal on the 1st of April, based upon your January use, which is a maximum use to which you should shoot, I would have thought nothing more about this, but when witnesses come in and wind all around the answer to the questions asked by Mr. Rabaut, and do not give specific answers to the questions he asked, then I invariably get suspicious, as you should know by now.

General, I will ask a list of questions, if I may, which will run to about a dozen in number, and if you will supply the answers for the record maybe this is the last time we will have to talk about coal.

I wish you would furnish for the record, please, General, a list of all the coal contracts existing or past. Let us not get down to little ones because I do not care about that, nor the emergency ones. However, let us say contracts that cover purchases of coal amounting to $1 million or more and for each of the contracts, please give me the following information:

(1) The date of the contract and the length of the contract,

(2) The total tonnage to be delivered under the contract, and the rate of delivery,

(3) Tonnage of coal delivered each year to date,

(4) Cost per ton, and per million B. t. u.'s each year,

(5) Whether the contractor is a broker or a distributor,

(6) The source of the coal supplied under each contract,

(7) Is or was any employee or former employee of the TVA connected with the contractor in any way? That is a little more important than it may seem to be to the committee, offhand.

(8) Was the contract let under competitive bids, as required by section 8, subsection (b) of the TVA Act, the first part of which, and the important part of which, I have already read into the record?

This subsection of the TVA Act says, and I quote:

> Bidders' financial responsibility, skill, experience and record of integrity in dealing may be considered by the Board in making awards.

My question is: Was the contract awarded to a bidder or supplier whose "financial responsibility, skill, experience and record of integrity in dealing" was established or confirmed?

(9) If the contract was let to a speculative broker or to an irresponsible broker or dealer, what justification was there for letting that contract?

(10) Does the contract—and this is important, General—as it was awarded, represent a change in the conditions as to grade of coal, amount of coal, or price, from the specifications advertised when the bids were requested? That is very important.

11. Was there any failure to deliver coal in accordance with the contract terms under any of the contracts executed? If so, was the contract void?

(The information requested follows:)

TENNESSEE VALLEY AUTHORITY COAL PURCHASE CONTRACTS ($1 MILLION OR MORE EACH)

Answers to questions asked by Representative Phillips. Accompanying tabulation has column numbers to correspond with question numbers.

1. Question. The date of the contract and the length of the contract.

Answer. Accompanying tabulation shows name of the contractor, number, and date of contract and length of contract. Also shown is the plant for which the delivered cost per million British thermal units is computed. (TVA reserves the right to ship the coal to any plant.)

2. Question. The total tonnage to be delivered under the contract and the rate of delivery.

Answer. Quantities are shown in the accompanying tabulation. In determining the amount involved in any contract the nominal tonnage and initial period were used without regard to option to expand, unless option had been exercised.

3. Question. Tonnage of coal delivered each year to date.

Answer. Accompanying tabulation shows these quantities by calendar years. Contract date is frequently different from the date for starting deliveries. Quantities for 1956 are for the first 3 months only. Deliveries are affected by exercise of TVA contract rights to increase or decrease the quantity within specified limits and by mine strikes, transportation strikes, miners' holidays, acts of God, and other force majeure conditions which may reduce the delivery.

4. Question. Cost per ton and per million British thermal units each year.

Answer. Accompanying tabulation shows cost per ton stated in the contract. This may be f. o. b. mine loaded on rail cars or barges or may be f. o. b. plant delivered by truck or barge. The British-thermal-unit cost is based on delivered cost to the plant and includes all transportation cost. Changes in cost per ton or per million British thermal units in the tabulation reflect increases because of miners' wages or other escalation factors in the contract and/or changes in the cost of transportation.

5. Question. Whether the contractor is a broker or a distributor.

Answer. The accompanying tabulation shows whether the contractor was the producer of the coal or a sales agent. Frequently the sales agent and the producer are under the same ownership.

6. Question. The source of the coal supplied under each contract.

Answer. Shown in accompanying tabulation.

7. Question. Is or was any employee or former employee of the TVA connected with the contractor in any way?

Answer. This question is answered below rather than in the accompanying tabulation. Insofar as we know only one former employee left TVA for employment with a coal company, Tom A. Lemay. On July 2, 1951, Mr. Lemay verbally tendered his resignation to Mr. Rockwell. This was confirmed in writing on July 3. On July 10 Mr. Rockwell wrote Mr. Lemay accepting the resignation and establishing July 20, 1951, as the last day of work.

Mr. LeMay went to work for Sterling-Midland Coal Co. of Chicago, Ill., a company which had not theretofore, had any contract relations with TVA.

On July 16, 1951, Sterling-Midland Coal Co. offered a bid on coal for the Shawnee Steam Plant. Contract TV-8227A was awarded them on September 28, 1951. This contract calls for 250,000 tons of coal the first year and 350,000 tons of coal for each of the next 9 years. The price in the contract is $3.50 per ton, subject to escalation for wages and certain other cost factors. To the best of our knowledge, Mr. LeMay did not participate in any way as a representative of either party in any negotiations leading to this contract.

Sterling-Midland initially bid their coal at $3.55 per ton f. o. b. mines on the New York Central Railroad, which carrier had quoted a rate of $1 per ton for freight from mine to the Shawnee Steam Plant. This price was considered too high. In order to save time, to permit the railroad to begin construction of necessary rail facilities, and to make new low-cost source of coal available TVA negotiated a contract for the quantity of coal and at the price shown in the above paragraph.

8. Question. Was the contract let under competitive bids as required by section 9 (b) of the TVA Act? That is, was the contract awarded to a bidder or supplier whose financial responsibility, skill, experience, and record of integrity in dealing was established or confirmed?

Answer. Answered in accompanying tabulation for each contract.

9. Question. If the contract was let to a speculative broker or to an irresponsible broker or dealer, what justification was there for letting the contract?

Answer. Such cases are identified and explained in accompanying tabulation.

10. Question. Does the contract as it was awarded represent a change in the conditions as to grade of coal, amount of coal, or price from specifications advertised when the bids were requested?

Answer. Answered in accompanying tabulation for each contract.

11. Question. Was there any failure to deliver coal in accordance with the contract terms under any of the contracts executed? If so, was the contract void?

Answer. This question was not numbered in the transcript. However, we have identified such cases in the accompanying tabulation and have noted the circumstances. We assume the second part of the question refers to cancellation action by TVA as a result of defaults by the contractor.

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) * Cost per Ton	Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Volunteer Coal Co. 56F-364-T2 9-23-55 24 Months (for Colbert)	420,000 17,500 Mo.	1955 1956	13,756 54,616	3.30	19.05	Sales Agent	Various Mines, Saline, Gallatin and Williamson Counties, Ill.	Yes	No	No	No
Lafayette Coal Co. 56F-4894-T4 1-23-56 36 Months (for Shawnee)	1,125,000 7,500 Wk.	Starts 4-2-56		2.45	16.94	Sales Agent	Black Tam Mine, Webster & Union Counties, Ky.	Yes	No	No	Starts 4-2-56
Capitol Coal Sales, Inc. TV-8235A 10-16-51 Sch. I 3 Yrs. Sch. III 2 Yrs. (for Widows Creek)	392,200 2,308 Wk. 460 Wk.	1952 1953 1954 1955 1956	8,701 73,583 103,231 90,326 19,342	4.55 Sch.I 5.15 Sch. III 5.00 Sch. III 5.03 Sch. I 5.595 Sch.III 5.435 Sch.III 5.29 Sch.I 5.29 Sch.I	20.61 20.45 20.83 22.47 22.12 22.52 23.48 23.48	Sales Agent	Various Mines, southeast, Tenn.	Yes	No	No	No
Premier-Cumberland, Inc. TV-8233A 11-30-51 5 Yrs. (for Widows Creek)	480,750 1,923 Wk.	None		3.80	20.25	Producer	Cherry Branch Mine, Grundy County, Tenn.	Yes	No	No	(See Note)
	Bidder reserved right in its bid to cancel contract in event sufficient commercially mineable coal to fulfill contract could not be found on property from which coal was offered. Contract cancelled by mutual agreement.										
Associated Coal Co. TV-8237A 9-28-51 3 Yrs. (for Widows Creek)	207,750 (approx.) 1,385 Wk.	1952 1953	9,018 14,723	4.85	20.43	Producer	Assco #1 & #2, Grundy County, Tenn.	(See Note)	No	No	Yes
	(8) Contract was let under competitive bids. However, contractor's financial responsibility, skill, etc., was not established or confirmed. The source of the coal under this contract was a new mine from an undeveloped area. TVA was interested in developing new sources of supply for the Widows Creek plant. Since the cost of the coal was low, the contract was awarded in the hope that a new source might be developed to help fill the expanding requirements of the Widows Creek plant.										
	(11) Contract was terminated by TVA. Ample coal supplies were available to TVA at costs lower than under this contract so no effort was made to collect damages.										
West Kentucky Coal Co. TV-8267A 3-5-52 5 Yrs. (for Johnsonville)	750,000 12,500 Mo.	1952 1953 1954 1955 1956	93,885 120,559 134,065 177,692 53,291	1.80 1.90 1.90 1.90 1.90 1.90 1.912	17.91 18.38 18.19 17.58 17.49 17.39 17.45	Producer	Pleasant View, East Diamond, North Diamond, Hecla, and Homestead Mines, Hopkins County, Ky.	No	No	Not Advertised	No
	(8) Negotiated under executive order 10231.										

Throughout this tabulation prices per ton and cost per million Btu's as shown in column 4 are not related in anyway to column 3 data.

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Love & Amos Coal Co. 16/TV-8244A 9/28/51 10 years (for Kingston)	5,000,000 41,667 No.	1953 1954 1955 1956	208,347 412,655 458,527 132,773	3.70 3.972 3.972 3.972 3.972 3.90 3.90	19.46 20.57 20.57 20.57 21.18 20.89 20.89	Sales Agent	Fentress and ABC Mines Putnam County, Tenn. and other mines on Tennessee Central Railway.	Yes	No	Yes	(see note)

(10) Bid price reduced 5¢ per ton by mutual agreement
(11) Through 9/30/55 contractor shipped in excess of schedule. Weekly delivery rate increased from 41,667/mo. to 62,500 tons/mo. effective 10/1/55. Since that date contractor has shipped in excess of old rate but less than new rate. Matter of contractor's obligations and TVA's rights presently under consideration by contractor's and TVA's attorneys.

Bransford Coal Co.,Inc. 16/TV-8243A 9/28/51 10 years (for Kingston)	5,000,000 41,667 No.	None		3.70	19.48	Producer	Central Mine Putnam County, Tenn.	See Note	See Note	Yes	Yes

(8 & 9) Contract was let under competitive bids, however, TVA representative was lacking in diligence in uncovering misleading statements by the bidder and reporting them to TVA management.
(10) Bid price reduced 5¢ per ton by mutual agreement.
(11) Contract cancelled effective 9/15/52 and replaced by contracts TV-8348A and TV-8349A with Bransford Coal Co., and Straight Fork Coal Co. respectively.

Bransford Coal Co.,Inc. 22/TV-8348A 9/15/52 10 1/2 years (for Kingston)	2,750,000 22,916 No.	1953 1954	71,906 202,370	3.42 3.70 3.69 3.66 3.94 3.97 3.69 3.66 3.94 3.97 3.737 3.710 3.991 4.021 3.737 3.710 4.009 4.039	19.48 19.48 20.58 20.46 20.46 20.58 20.87 20.75 20.75 20.87 21.06 20.95 20.96 21.08 21.06 20.95 21.03 21.15	Sales Agent	G&R, Jamestown Group, Taylor & Miles & McDonald Mines Scott, Fentress and Putnam Counties, Tenn.	No	No	See Note	Yes

(8) Contract covers portion of coal bought under TV-8243A. Contractor's financial responsibility, skill, etc., was confirmed.
(10) Contracts TV-8348A & TV-8349A cover 4,750,000 tons of the 5,000,000 tons bought under contract TV-8243A which was cancelled by mutual agreement.
(11) Contractor unable to deliver part of coal requirements because of termination of rail service to Jamestown group mines. Contract TV-8348A renegotiated and replaced by TV-8567A effective 12/1/54.

Straight Fork Coal Co. 22/TV-8349A 9/15/52 10 1/2 years (for Kingston)	2,000,000 16,667 No.	1954 1955	145,419 46,573	3.42 3.69 3.97 3.74 3.69 3.098 2.998	19.48 20.89 20.87 21.07 20.67 18.45 17.04	Producer	Straight Fork Mine Scott County, Tenn.	See Note	No	See Note	No

(8) Contract covers portion of coal bought under TV-8243A. Contractor's financial responsibility, skill, etc., was confirmed.
(10) Contract TV-8348A & TV-8349A cover 4,750,000 tons of the 5,000,000 tons bought under contract TV-8243A which was cancelled by mutual agreement.
(11) Notice of cancellation given by TVA effective 7/5/54 pursuant to TVA option to terminate deliveries in event of increase in freight rate or price. Effective date of cancellation later extended by mutual agreement to 5/31/55.

TENNESSEE VALLEY AUTHORITY

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
West Kentucky Coal Co.	409,600	1953	51,707	2.50	18.33	Sales Agent	Homestead Mine	Yes	No	Yes	No
TV-8373A	2,000 to	1954	157,186	2.50	17.78		Hopkins County,				
5-8-53 27 Months	3,846 Wk.	1955	148,468	2.50	17.69		Kentucky				
(for Johnsonville)				2.50	17.61						
				2.58	17.95						
	The contractor originally offered 200,000 tons of coal for delivery over a period of 12 months. Because of the favorable price and advantage to be gained in negotiating an all-rail freight rate from the west Kentucky coal field to Johnsonville via the L&N railroad, TVA requested and the contractor agreed to increase the tonnage to 409,600 tons for delivery over a 27-month term.										
Walter Hiedsoe & Co.	428,500	1953	59,318	2.29	18.18	Sales Agent	Riverview Mine	Yes	No	No	No
TV-8371A	2,250 to	1954	128,555	2.28	18.14		Ohio County,				
5-8-53 36 Months	4,000 Wk.	1955	112,782	2.60	18.20		Kentucky				
(for Johnsonville)		1956	19,982	2.29	17.61						
				2.28	17.57						
				2.60	17.66						
				2.28	17.48						
				2.28	17.39						
Capitol Coal Sales, Inc.	240,000	1952	146,940	4.70	18.92	Sales Agent	Various mines	Yes	No	No	No
TV-8137A	10,000 No.	1953	99,961	4.92	19.74		Southeast Tennessee				
2-5-51 24 Months				5.275	21.08						
(for Widows Creek)				5.15	20.61						
				5.03	20.16						
	Contractor shipped full contract tonnage requirement. However, some tonnage was shipped from unauthorized sources. Contract price was reduced on unauthorized shipments.										
Premier-Cumberland, Inc.	540,000	1952	15,248	3.65	20.56	Producer	Cherry Branch Mine,	Yes	No	No	Yes
TV-8134A	15,000 No.	1953	30,539	3.75	20.95		Grundy County,				
2-5-51 36 Months				3.75	20.16		Tennessee				
(for Widows Creek)											
	This was a developmental contract. Contractor failed to perform as to quality and quantity. The contract was terminated July 1, 1953, without liability to contractor because lower cost coal was available through current market purchases.										
Clinchfield Coal Corp.	1,500,000	1951	152,839	Watts Bar							
(Meadow Creek Coal Co., Inc.)	3,846 to	1952	184,353	3.50	20.75	Producer	Solon #3 Mine	Yes	No	No	No
TV-8169A	5,770 Wk.	1953	228,690	3.766	22.58		Putnam County,				
5-31-51 5½ Years		1954	297,940	3.766	24.19		Tennessee				
(for Watts Bar - Kingston)		1955	316,118	3.805	24.35						
		1956	90,769	Kingston							
				3.805	20.49						
				3.766	20.23						
				3.675	19.95						
				3.715	20.12						
				3.715	20.45						
				3.83	20.93						
				3.90	20.89						

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)	(4) Cost per ton	(4) Cost per million Btu	(5)	(6)	(7)	(9)	(10)	(11)
Tennessee Products & Chemical Corp. TV-8407A Schedule I 7/8/53 36 Months (for Widows Creek)	675,000 4500 Wk.	(1953 50,218) (1954 528,071) (1955 422,352) (1956 155,973) (all schedules)	4.308 4.492	19.65 20.34	Producer	Reels Cove Mine Marion County, Tenn.	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8407A Schedule II 7/8/53 36 months (for Widows Creek)	375,000 2500 Wk.	See Schedule I	4.723	19.65	Producer	Tepco Strip Mine Marion County, Tenn.	Yes	No	No	No
Effective Nov. 8, 1954, balance of tonnage due transferred to Schedule No. 3. Schedule II was discontinued.										
Tennessee Products & Chemical Corp. TV-8407A Schedule III 7/8/53 36 months (for Widows Creek)	300,000 2000 Wk.	See Schedule I	4.95 4.82	19.65 19.16	Producer	Tepco Truck Mine Marion County, Tenn.	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8407A Schedule IV 7/8/53 36 months (For Widows Creek)	225,000 1500 Wk.	See Schedule I	4.359 4.543	19.84 20.54	Producer	Reels Cove Mine Marion County, Tenn.	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8407A Schedule V 7/8/53 12 months (for Widows Creek)	100,000 2000 Wk.	See Schedule I	5.00	19.84	Producer	Tepco Truck Mines Marion County, Tenn.	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8422A 8/24/53 50 weeks (for Watts Bar)	250,000 5000 Wk.	1953 78,773 1954 109,902	4.53	18.95	Producer	Tepco Truck & Whitwell #9 Mines Marion County, Tenn.	Yes	No	No	No

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)	(4) Cost per ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Bessemer Coal, Iron & Land Co. 50P-7090-T4 3/15/56 12 months (for Kingston)	200,000 4000 dk.	(starts 4/3/56)	5.60	23.48	Producer	Windrock Mine Anderson County, Tenn.	Yes	No	No	(starts 4/3/56)
Clinchfield Fuel Co. 50P-7090-T7 3/15/56 18 months (for John Sevier)	375,000 5000 dk.	(starts 8/1/56)	3.90	21.20	Sales Agent	Ex #5 Mine Russell County, Va.	Yes	No	No	(starts 8/1/56)
Clinchfield Fuel Co. 50P-7090-T6 3/15/56 15 months (for John Sevier)	247,000 3000/4000 dk.	(starts 10/1/56)	4.15	21.79	Sales Agent	Moss #2 Mine Russell County, Va.	Yes	No	No	(10/1/56)
General Coal Co. 50P-7090-T9 3/15/56 12 months (for John Sevier)	390,000 7000 dk.	(starts 7/1/56)	4.30	21.96	Sales Agent	Crossbrook #1, #2, Cane Patch and Imboden Mines Wise County, Va.	Yes	No	No	(starts 7/1/56)
Clinchfield Fuel Co. 50P-7090-T10 3/15/56 12 months (for John Sevier)	250,000 5000 dk.	(starts 5/1/56)	4.15	22.16	Sales Agent	Hilden Mine Russell County, Va.	Yes	No	No	(starts 5/1/56)
Tenn. Consolidated Coal Co. 50P-7090-T20 4/18/56 12 months (for Widows Creek)	200,000 4000 dk.	(starts (4/23/56)	4.85	21.99	Producer	Palmer No. 1 Mine Marion and Grundy Counties, Tenn.	Yes	No	No	(starts 4/23/56)
H. A. Griffith 19/TV-8236A 9/26/51 5 years (for Widows Creek)	520,000 2400 dk.	1952 90,150 1953 134,843 1954 87,694 1955 65,891	4.40 5.00 5.00 5.00 4.85 5.10 5.10	20.67 22.87 22.17 21.44 21.77 22.72 22.72	Sales Agent	Goforth #3 and Star Gap Mines Marion County, Tenn.	Yes	No	No	No

In 1953 contractor indicated inability to meet scheduled requirements of contract. He proposed that his obligation to deliver be reduced by 60,000 tons if replacement coal available at same or lower cost. 60,000 tons cancelled and replaced with equivalent quality coal by separate purchase at 20 cents per ton less cost to TVA.

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Pamco Mining Co. TV-8646A 6-24-55 36 Months (for Kingston)	724,000 1,000 to 5,000 Wk.	1955 1956	5,909 11,041	3.45	18.02	Producer	Pamco Mines, Scott & Campbell Counties, Tennessee	Yes	No	Yes	Yes
	(10) Pamco Mining Co. is owned by Commercial Fuel Co. Identical bids submitted by each except for 6¢ difference in price. One contract incorporating both offers at the average of the two prices was awarded to Pamco Mining Co. Both original bids quoted prices f.o.b. plant for delivery via rail. Contract awarded on the basis of mine price less deduction of [redacted] rail rate.										
	(11) Contract has not been voided. Tonnage under this contract was to be produced from an unproven source. Contractor has consistently failed to meet delivery schedules to date because original mine source did not contain the mineable reserves anticipated. Contractor has located substantial reserves in Middlesboro, Kentucky area and expects to begin shipping at substantial rate about 5-1-56.										
Cumberland Gap Coal Co. TV-8576A 1-12-55 5 Years (for Kingston)	1,250,000 5,000 Wk.	1955 1956	122,267 1,593	3.55 3.55 3.55	18.35 18.65 18.65	Producer	Cumberland Gap Mine Claiborne County, Tennessee	Yes	No	Yes	Yes
	(10) Bid firm for 10-year term. By agreement, contract awarded for 5 years with TVA option to extend for additional 5 years.										
	(11) Contractor gave excess production costs among other reasons for failing to deliver as required. Matter under consideration by TVA Division of Law. [redacted].										
Bell & Zoller Coal Co. (Consolidated Coal Co.) TV-8141A 2-5-51 5 Years (for Shawnee)	1,250,000 20,833 Mo.	1952 1953 1954 1955 1956	234,364 232,494 262,741 186,632 45,023	3.00 3.195 3.515 3.675 3.675	17.63 18.51 19.84 20.51 20.72	Producer	Buckhorn & Jefferson #20 Mine Williamson County, Illinois	Yes	No	No	No
West Kentucky Coal Co. TV-8139A 2-5-51 5 Years (for Johnsonville)	720,000 12,000 Mo.	1952 1953 1954 1955 1956	134,986 127,919 118,598 112,413 34,234	2.90 2.98 2.98 2.98 3.165 3.165 3.165 3.165 3.165 3.25	20.32 20.66 20.32 20.24 21.02 20.85 20.30 20.21 20.13 20.59	Producer	Hecla, North Diamond, Pleasant View, East Diamond, and Homestead Mines Hopkins County, Kentucky	Yes	No	No	No
Freeman Coal Mining Co. (Chicago, Wilmington & Franklin Coal Co.) TV-8138A 2-5-51 5 Years (for Shawnee)	900,000 15,000 Mo.	1952 1953 1954 1955 1956	117,530 165,377 160,323 127,705 41,097	3.00 3.195 3.37 3.37	18.03 18.87 19.61 19.83	Producer	Orient #1 & 2 Mines Franklin County, Illinois	Yes	No	No	No
Southern Coal Co., Inc. TV-8374A 2-8-53 3 Years (for Johnsonville)	435,000 2,900 Wk.	1953 1954 1955 1956	52,443 121,919 148,265 30,894	2.38 2.38 2.38 2.38 2.43	18.41 17.85 17.77 17.68 17.90	Sales Agent	Vogue Mine Muhlenberg County, Kentucky	Yes	No	No	No

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Whitwell Coal Corp. TV-8550A 9-13-54 7 Months (for Widows Creek)	182,000 6,500 Wk.	1954 1955 1956	84,544 34,348 -	4.51	18.00	Sales Agent	Pocket Mines, Marion & Grundy Counties, Tenn.	Yes	No	Yes (	No
While bid was under consideration by TVA, bidder withdrew bid on grounds that mine safety changes required by Department of Labor under Walsh-Healey Act would materially increase production cost above that contemplated at time of bid. In consideration of bidder's cancellation of withdrawal notice, TVA agreed to allow bidder option to cancel contract in event he could not economically continue performance on the contract as result of cost of required mine safety changes. Contractor exercised option to cancel contract effective 2-2-55.											
Love & Amos Coal Co. TV-8521A 6-4-54 24 Months (for Kingston)	500,000 (approx.) 5,000 Wk.	1954 1955 1956	62,558 107,579 3,749	3.75 3.75 3.75	18.85 19.15 19.15	Producer	Osborne Mine, Campbell County, Tenn.	Yes	No	No	Yes
Contractor has consistently failed to meet delivery schedule. He has contended that labor unrest and sporadic violence in mine area has prevented required deliveries. Disposition of remainder of tonnage due on contract is [redacted] under study by TVA division of law. Loss of the anticipated tonnage due to labor unrest. Right of TVA to insist D											
General Coal Co. TV-8644A 6-20-55 12 Months (for John Sevier)	292,000 4,000/6,000 Wk.	1955 1956	144,569 122,958	3.55 3.63	18.94 19.24	Sales Agent	Imboden & Crossbrook #1 & #2 Mines, Wise County, Va.	Yes	No	No	(See Note)
Contractor fell behind in deliveries during first five months. Is now making up deficiency satisfactorily. Contract was not [redacted] cancelled.											
Whitney & Kemmerer, Inc. 56P-5-E2 10-25-55 12 Months (for John Sevier)	292,500 2,750/8,250 Wk.	1955 1956	19,977 36,793	3.76	20.50	Sales Agent	McAmis Bros. Contractors Mine, Wise County, Va.	(See) (Note)	No	No (not advertised)	No
Contract was negotiated under Executive Order 10231. Contractor's financial responsibility, skill was already established with TVA.											
Whitwell Coal Corp. TV-8595A 2-18-55 24 Months (for Colbert)	600,000 6,000 Wk.	1955 1956	156,716 82,772	5.00	19.83	Producer	Tennessee Consolidated Pocket Mines, Marion & Grundy Counties, Tenn.	Yes	No	Yes	Yes
(10) Original bid tonnage 9,520 T/wk., highest price offer accepted, base tonnage reduced to 6,000 T/wk. to conform to TVA's requirements. (11) Contractor has failed to meet fully his delivery schedule. Contract has not been [redacted] because a portion of the deficiency is excusable for causes beyond contractor's control. Unexcusable deficiency will be made up.											
Tennessee Products & Chemical Corp. 56P-4968-T3 2-20-56 18 Months (for Kingston)	390,000 Max. 2,500/5,000 Wk.	Starts 5-1-56		4.28 4.33 4.38	21.80 22.00 22.20	Sales Agent	Bruns Strip Mines, Putnam, Cumberland, White, and Van Buren Counties, Tenn.	Yes	No	Yes	Starts 5-1-56
Coal offered was from a new and unproven source. After TVA field investigation there was reasonable doubt of bidder's ability to deliver full weekly rate offered. Since this was a low bid and it is to TVA's advantage to develop new sources of supply, it was agreed that bidder's obligation would be reduced from the bid quantity to bidder's probable productive capacity. In consideration for TVA's agreeing to reduce bidder's obligation, bidder agreed to reduction in bid price on the minimum weekly obligation with the original bid price to be paid in the event production reached the original bid weekly delivery rate.											

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TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Old Ben Coal Corp. TV-8565A 11-22-54 36 Months (for Shawnee)	750,000 5,000 Wk.	1954 1955 1956	22,218 266,184 70,852	2.725/3.07 2.725/3.07 2.725/3.07	17.26/17.27 17.26/17.27 17.47/17.49	Producer	Old Ben Mines #9, #14 a/o #22 Franklin County, Illinois	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8450A Sch. I 2-11-54 36 Months (for Widows Creek)	750,000 5,000 Wk.	1954 1955 1956	172,334 213,126 82,614	4.22 4.22 4.22	19.16 19.16 19.16	Producer	Tepco Truck Mines, Marion County, Tennessee	Yes	No	No	No
Tennessee Products & Chemical Corp. TV-8450A Sch. II 2-11-54 36 Months (for Widows Creek)	525,000 3,500 Wk.	1954 1955 1956	118,677 130,517 49,575	3.96 3.96 3.96	19.16 18.59 18.59	Producer	Tepco Daus Mountain Mines Sequatchie County, Tennessee	Yes	No	No	No
Bransford Coal Co. TV-8464A 3-12-54 36 Months (for Watts Bar)	450,000 3,000 Wk.	1954 1955 1956	22,580 - -	4.54	19.24	Sales Agent	Daysville Mine, Cumberland County, Tennessee	Yes	No	No	Yes
	Contract cancelled 7-31-1954. Bidder reserved option to cancel contract during first six months if penalties for failure to meet guaranteed quality exceeded 15¢ per ton. Penalties exceeded this amount And option was exercised.										
Nashville Coal Co. TV-8463A 3-12-54 36 Months (for Colbert)	1,050,000 87,500 Calendar Quarter	1954 1955 1956	84,224 305,730 88,904	3.98 4.08 4.08	17.94 18.37 18.37	Sales Agent	Uniontown Mine, Union County, Kentucky	Yes	No	Yes	No
	Bidder offered 65,000 tons per Calendar Quarter. This was lowest priced coal offered on the invitations. The bid contained several conditions which were objectionable to TVA. In consideration of increasing quantity to 87,500 tons per Calendar Quarter, bidder withdrew or satisfactorily modified conditions.										
Beaver Dam Coal Co. TV-8457A 3-12-54 36 Months (for Colbert)	450,000 Various 1,000 to 3,828 Wk.	1954 1955 1956	61,022 176,042 39,688	2.35 2.42 2.42	18.09 18.37 17.64	Sales Agent	Ken Coal Co. Mine Ohio County, Kentucky	Yes	No	No	No
Southern Coal Co. TV-8458A 3-12-54 36 Months (for Colbert)	780,000 1,700 to 6,925 Wk.	1954 1955 1956	120,099 294,956 72,537	2.35 2.42 2.42	18.09 18.37 17.64	Sales Agent	Ken Coal Co. Mine Ohio County, Kentucky	Yes	No	No	No
Lueking Bros. TV-8643A 3-31-55 36 Months (for Kingston)	660,000 3,846 Wk. (Avg.)	1955 1956	95,338 34,298	4.65 4.72	18.31 18.57	Producer	Lueking Mine Morgan County Tennessee	Yes	No	No	No

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Bransford Coal Co.	1,290,511 (Sch. I)	1954	15,086	3.44	18.61	Sales Agent	Bruns Mine (Sch. I)	(See Note)	No	(See Note)	Yes
TV-8567A	26,000 (Sch.II)	1955	233,153	3.44	18.94		Fentress County,				
12-1-54	7,837 Wk. (Sch. I)	1956	46,045	3.51	19.22		Tennessee				
Sch. I - 3 Yrs. 2 Mo.	500 Wk. (Sch.II)						Mooretown & Ledbetter				
Sch.II - 1 Yr.	(Average)						Mines (Sch. II)				
(for Kingston)							Fentress County,				
							Tennessee				
	(8 & 10) Contract replaced Contract TV-8348A. Contractor's financial responsibility, skill, etc. was established.										
	(11) Contract was not voided. Tonnage rescheduled for makeup.										
Dixie Diamond Coal Co.,Inc.	720,000	1951	126,709	4.66	20.82	Sales Agent	Various Mines	Yes	No	No	No
TV-8040A	20,000 Mo.	1952	223,386	4.99	22.19		Gallatin & Saline				
6-12-50 3 Yrs.		1953	278,968	5.22	23.15		Counties,				
(for Johnsonville)		1954	68,030				Illinois				
West Kentucky Coal Co.	1,000,000	1951	43,541	2.75	21.20	Sales Agent	Homestead Mine	Yes	No	No	No
TV-8043A	16,667 Mo.	1952	250,452	2.92	21.95		Hopkins County,				
6-12-50 5 Yrs.		1953	161,635	2.92	21.60		Kentucky				
(for Johnsonville)		1954	165,800	2.92	21.51						
		1955	139,098	3.215	22.82						
		1956	45,734	3.215	22.64						
				3.215	22.06						
				3.215	21.97						
				3.215	21.88						
				3.38	22.62						
Southern Coal Co.	500,000	1951	17,339	2.75	21.48	Sales Agent	Vogue Mine	Yes	No	No	No
TV-8044A	8,334 Mo.	1952	138,435	2.93	22.29		Muhlenberg County,				
6-12-50 5 Yrs.		1953	95,307	2.93	21.93		Kentucky				
(for Johnsonville)		1954	75,924	2.93	21.84						
		1955	78,220	3.25	23.28						
		1956	20,597	3.25	23.10						
				3.25	22.51						
				3.25	22.42						
				3.25	22.33						
				3.39	22.96						
Coiltown Mining Co.	7,500,000	1952	156,856	2.85	18.18	Producer	Magnolia, Red Bud,	Yes	No	Yes	No
(Magnolia Mining Co.)	62,500 Mo.	1953	660,536	2.881	18.31		Klondike Mines				
TV-8228A		1954	602,347	3.011	18.84		Hopkins County,				
12-21-51 10 Yrs.		1955	891,087	3.047	18.99		Kentucky				
(for Shawnee)		1956	201,554	3.027	18.91						
				3.009	18.84						
				3.009	18.51						
				3.027	18.58						
				3.007	18.50						
				2.834	17.78						
				2.927	18.17						

Term and quantity changes negotiated under Executive Order 10231.

TENNESSEE VALLEY AUTHORITY
COAL PURCHASE CONTRACTS
($1,000,000 or more each)

(1)	(2)	(3)		(4) Cost per Ton	(4) Cost per Million Btu	(5)	(6)	(8)	(9)	(10)	(11)
Southern Coal Co.	5,000,000	1952	95,217	2.45	19.42	Sales Agent	Homestead Mine	Yes	No	No	No
TV-8229A	41,667 Mo.	1953	440,785	2.45	19.33		Hopkins County,				
9-14-51 10 Yrs.		1954	413,376	2.635	20.15		Kentucky				
(for Johnsonville)		1955	378,079	2.635	19.97						
		1956	115,386	2.692	20.22						
				2.677	20.15						
				2.677	19.58						
				2.693	19.65						
				2.700	19.59						
				2.747	19.80						
				2.747	19.71						
				2.837	20.11						
Capitol Coal Sales, Inc.	1,500,000	1952	152,318	2.95	19.18	Sales Agent	Green Coal Co.	Yes	No	No	Yes
& Green Coal Co.	25,000 Mo.	1953	258,646	2.95	18.78	&	(K-9) Mine,				
TV-8230A		1954	231,078	3.141	19.63	Producer	Daviess County,				
9-14-51 5 Yrs.		1955	91,692	3.185	19.82		Kentucky				
(for Johnsonville)		1956	66,147	3.174	19.77						
				3.185	19.82						

TVA suspended shipments on this contract effective November 30, 1954, because coal being furnished failed to meet contract specifications. Contractor installed preparation plant. Shipments resumed June 13, 1955. Coal meets contract requirements.

Sterling Midland Coal Co.	3,400,000	1953	69,494	3.50	18.31	Sales Agent	Will Scarlett Mine	(See Note)	No	(See Note)	No
& Stonefort Corp.	20,833 Mo.	1954	238,525	3.777	19.39	&	Williamson County,				
TV-8227A	(1st Year)	1955	275,604	3.793	19.45	Producer	Illinois				
9-28-51 10 Yrs.	29,167 Mo.	1956	63,538	3.723	19.18						
(for Shawnee)	(9 Years)			3.73	19.21						
				3.73	19.40						

(8 & 10) The coal under this contract was offered under competitive bids. A price reduction was negotiated with the contractor under Executive Order 10231 to obtain additional low cost coal for the expanding requirements of the Shawnee plant. An additional major consideration in negotiating the contract was the importance of opening the coal field on the NYC Railroad in southern Illinois to TVA. The contractor's financial responsibility, skill, etc. was confirmed.

Sterling Midland Coal Co.	1,100,000	1953	70,291	3.20	17.45	Sales Agent	New Castle Mine	(See Note)	No	(See Note)	No
TV-8354A	16,000 Mo.	1954	254,456	3.30	17.84		Saline County,				
12-22-52 5 Yrs.-3 Mo.	(varies during	1955	355,019	2.75	16.76		Illinois				
(for Shawnee)	contract)	1956	77,576	3.20	17.45						
				3.258	17.67						
				2.785	16.90						
				3.20	17.45						
				2.75	16.76						
				3.249	17.64						
				2.793	16.93						
				3.249	17.64						
				2.793	17.14						

Contract was not let under competitive bids. This contract was developed as a portion of an option to TVA under Contract TV-8266A with the Sterling Midland Co. Contract TV-8266A provided for delivery of up to 2,450,000 tons of coal and was negotiated under Executive Order 10231 together with Contract TV-8227A. Contractor's financial responsibility, skill, etc. was confirmed.

Mr. PHILLIPS. I have a few odds and ends of questions, the first one of which is as follows:

Is it not true that reputable and responsible producers and dealers have offered TVA more coal than the TVA requires, and at reasonable prices?

In response to the great majority of TVA's invitations of coal bids, more coal has been offered by responsible bidders than was needed and TVA accepted the lowest and best responsible offers for the required amounts of coal. During the last year, however, in the case of some invitations for the Kingston and John Sevier plants, the total offers of coal from all bidders were not adequate for TVA's needs.

Has any coal contract been awarded to a bidder who made false statements in his bidding papers, and which were known to TVA to be false prior to the award? That is not going to be very hard to answer, as I have already read you the TVA testimony on that, General.

TVA's practice is to reject any bid in which the bidder is known to have made any false statement. Exceptions may be made if an inaccurate statement can be explained by inadvertence, misunderstanding or ignorance, provided also that the bid would have been wholly acceptable on the basis of the correct information. TVA endeavors not to make any contract based on fraudulent representations, and to the best of our knowledge and belief no contract has been entered into with a knowledge of such representations. In the case of certain TVA coal contracts reviewed by the House in 1952, including particularly the Bransford contract referred to above, TVA's representative was lacking in diligence in uncovering misleading statements by the bidders and reporting them to the TVA management.

Was there any failure to deliver coal in accordance with the contract terms under any of the contracts executed? If so, was the contract voided?

There were certain instances of failure to deliver in accordance with contract terms. See the table furnished in response to the numbered questions above. Where this occurred, among the contracts listed, the fact is noted in the table and the circumstances are described in the notes that accompany the table.

Has any evidence developed as to collusion or improper interest on the part of any TVA employee and if so, was such employee discharged?

No. If this question deals with the TVA representative referred to in the response to the second preceding question, he was relieved of his procurement duties and subsequently left TVA. This employee was considered to have exercised poor judgment but not of participating in collusion.

Has the TVA coal purchase policy followed the directives of the TVA act to provide for agricultural and industrial development of the Tennessee Valley?

In other words, could all of the coal, or how much of the coal needs could have been supplied by development within the TVA Valley itself?

As to the first part of this question, the TVA act neither requires nor permits TVA in the purchase of materials and supplies to discriminate in favor of local bidders. However, the new market for coal created by the TVA steam plants is bringing about a marked increase in coal production both in the Tennessee Valley and in nearby coal producing areas. Moreover, the TVA policy of encouraging comparatively small coal operators to compete for a share of the TVA market has been especially helpful to the coal industry within the Tennessee Valley where coal deposits characteristically are small and scattered and do not lend themselves as readily as elsewhere to large scale development efforts.

The answer to the second question is that competitive bidding, applied in accordance with the TVA act, has shown that as a practical matter, TVA needs

to depend upon areas fairly close to, but outside of, the Tennessee Valley to supply the greater part of its coal. The western Kentucky, southern Illinois, and southern Indiana coalfields lie entirely outside the Tennessee Valley. These are the the fields closest to the Shawnee and Johnsonville plants and constitute the practical and economical source of coal for those plants. At the Colbert plant those fields have some competition from the Alabama coalfield which also lies outside the Tennessee Valley. The Kingston and John Sevier plants are supplied from a coalfield that extends through portions of eastern Kentucky, eastern Tennessee, and southwestern Virginia. In this field the major portions of the reserves and production are outside the Tennessee Valley. Only in the case of the Widows Creek plant is the natural supply from a field that lies principally within the Tennessee Valley—the southern Tennessee coalfield.

That is as much as I have about coal.

Mr. KAMPMEIER. I was just going to ask, Mr. Phillips, what your suggestion is with regard to a time schedule. We do not want to make too hurried a reply. We are anxious to provide answers to all those questions because we want you to have the facts and we think the committee will be pleased with what the record was, but it will take time to go through the old files and we do not want to have to do too hurried a job, and I am wondering how much time we will have.

Mr. KIRWAN. I would say you had better get that for the record on those 11 questions just as quickly as possible.

Mr. KAMPMEIER. We will discuss the time requirements with the clerk.

Mr. KIRWAN. Off the record.

(Discussion off the record.)

Mr. KAMPMEIER. Do you wish to have this material in your hands as a part of the transcript, or can we furnish it to you later for the printed record?

Mr. KIRWAN. We desire to have it as a part of the transcript.

Mr. KAMPMEIER. That will necessitate a little quicker time schedule, perhaps.

Mr. KIRWAN. Yes; but you can talk to the clerk about that.

You may proceed, Mr. Phillips.

Mr. PHILLIPS. Let us go to another subject, Mr. Chairman, if I may.

General, if Congress does not provide funds for TVA power expansion, a question which has been asked you several times within the last 36 hours——

Mr. KIRWAN. Mr. Kampmeier, how long will it take you to furnish the answers to the questions which have already been propounded?

Mr. KAMPMEIER. We could not possibly do it today, because there are perhaps a hundred contracts involved, Mr. Chairman. It would be a matter of days.

Mr. KIRWAN. How long will it take you to put the answers in the record?

Mr. KAMPMEIER. I would think that to do the work properly and carefully and check it we ought to have 10 days or so.

Mr. KIRWAN. I do not think we can hold the record up that long.

Mr. PHILLIPS. How many million-dollar contracts do you have now?

Mr. KAMPMEIER. Are you interested only in the ones that are in existence today or are you interested in all that we have had over the last 20 years?

Mr. PHILLIPS. No; not over the last 20 years. I had in mind a period of, perhaps, my own acquaintance with TVA, which is about 10 years.

Mr. TABER. You must have your annual reports of the TVA which would give most of that information.

Mr. KAMPMEIER. Suppose we approach it this way, if I might make a suggestion: We will start with the latest contracts, and we will work back and give you the material as fast as we can, and get it in your hands as completely as possible for the transcript as the sort of timetable which has been described will permit. This is not entirely material which is in my own jurisdiction, and I cannot say offhand how much time it will take the people in the divisions involved to pull the material together, but it would be a matter of some days.

Mr. KIRWAN. If we can have it at the beginning of the week or by midweek, it will be all right. We are going to try to mark up this bill by the end of next week.

Mr. KAMPMEIER. We will certainly have a substantial part of it by then, but whether we can complete all the details by then is doubtful.

NEW POWER GENERATING FACILITIES

Mr. PHILLIPS. I started to ask the general this: General, several times in the last 36 hours you have been asked what would happen if the Congress should not provide funds for TVA power expansion, and the implication was that you would have to probably close down. I will change that to say that you would have to operate under very difficult circumstances. Would that be right?

Mr. VOGEL. Yes, sir.

Mr. PHILLIPS. Now, I want to ask a supplementary question: What would prevent the prospective industrial customers of the TVA from following the good example just set by Memphis, and build their own power generator facilities?

Mr. VOGEL. I think that anyone who should decide that that were the better course to pursue would certainly be free to do so. There is a question, of course, as to the time that might be required to build such facilities, of course.

Mr. PHILLIPS. Are you suggesting you can build one more rapidly than anyone else can build it?

Mr. VOGEL. I am only saying what has been said before, and that is in order to add any steam units there is required something like 2.5 to 3 years from the time first orders for equipment are placed, and even TVA, with the existing plants to which units would be added would be fairly crowded on such a schedule.

Mr. PHILLIPS. Well, I think you have a good example down in the Tennessee Valley area which should take the concern out of the minds of some of our friends to the effect that if TVA does not get money for additional plants, power will still be supplied to the area.

Mr. EVINS. Will the gentleman yield at this point for an observation?

Mr. PHILLIPS. I am always glad to yield to you, Mr. Evins.

Mr. EVINS. I might point out that TVA has long-term contracts and commitments with municipalities, REA Co-ops, and others, and it might involve a question of a violation of contract if those things were to develop.

Mr. PHILLIPS. I do not want any violation of contracts, but that raises the next question: These contracts about which Mr. Evins speaks—how soon do they begin to expire; that is, the various contracts which you have with distributors of TVA power?

Mr. VOGEL. They expire from time to time depending on when they were first made. Several have already expired and have been renewed.

Mr. PHILLIPS. As they expire in the future, do you contemplate renewing them?

Mr. VOGEL. Yes, sir.

Mr. PHILLIPS. When you renew them will they be amended to permit the distributor to construct power generating facilities of its own if they want to do so?

Mr. VOGEL. Certainly, if that were desired. I feel sure that if a distributor chose to take that action the Board would certainly give them a very favorable hearing.

Mr. PHILLIPS. Will they also be amended to permit the distributor to purchase power from other sources if he wishes to do so?

Mr. VOGEL. Well, I find it very difficult, Mr. Phillips, as you can understand, to speak for my other two colleagues; I think each of these cases would have to be separately considered, and since they are not here, I will have to speak for myself and say that I certainly would be extremely favorable to such contracts.

Mr. PHILLIPS. Then there is one other amendment which always seems to me to be very desirable, having at one time served as the chairman of a committee of a local government on this same matter: What about the control of the resale rates? Will they be amended to permit distributors or a municipal distributor to set its own resale rates on this power as they do in all the other 40 States of the United States?

Mr. VOGEL. No; I should think not. That question has been raised quite a number of times, and the terms of the act are fairly clear to the effect that electricity shall be sold at as low a rate as possible, and it would seem to me, surely, that if any large profit is to be made, it should be made by the United States and not by the distributor.

Mr. PHILLIPS. Off the record.

(Discussion off the record.)

Mr. SWIDLER. Mr. Phillips, if you are looking at the same print I am, sir, you will find the statutory provisions on resale rates on page 12, section 10, the proviso beginning on the fifth line from the bottom of the page, and also in section 11.

Mr. PHILLIPS. Well, that is not mandatory. It is permissive. It does not say, generally, where you are about low rates.

Mr. SWIDLER. It does in section 11, which I also referred to.

This policy is further declared to be that the projects herein provided for shall be considered primarily as for the benefit of the people of the section as a whole, and particularly the domestic and rural consumers to whom the power can economically be made available, and accordingly that sale to and use by industry shall be a secondary purpose—

Mr. PHILLIPS. I do not take exception to that at all.

Mr. SWIDLER (reading):

to be utilized principally to secure a sufficiently highload factor and revenue returns which will permit domestic and rural use at the lowest possible rates and in such manner as to encourage increased domestic and rural use of electricity.

Mr. PHILLIPS. I think that is capable of a dual interpretation on the basis of my own practical experience with it; that is, if the people themselves would like to add a fraction of a mill for the construction of a park which they would consider to be to their own benefit, they would not think that the TVA would have any authority to say they could not do it if they wanted to.

Mr. VOGEL. I think there you open up a question of degree, Mr. Phillips. I think you, too, would agree that it would be rather improper for an agency of the United States Government such as TVA to bend every effort and make use of every proper device in order to sell power as cheaply as possible and at as small a margin as possible, and then have some community sell it at a rate which would permit them to wipe out all of the necessity for city taxes, for example, and to go into park development, and so forth.

Mr. PHILLIPS. General, you and I must have a fair different interpretation of representative government, because this depends entirely upon the opinion of the local people. If the local people do not want to do it, and the board of trustees or commissioners or whatever you call them in Tennessee—we call them city trustees—if they added a levy or a supplementary tax upon the people through the power costs that was excessive, or for some purpose the people did not agree with, I give you one guess as to what would happen to the city trustees in the next election. That is what is known as representative government, and I believe in it, and I do not see that the TVA has authority to come in and say that the city trustees and the city council or whatever you choose to call it may or may not do that. So, your answer to my question is that they will probably not be amended along those lines.

I have only one more question. I would like another tabulation, if you please, Mr. Chairman——

Mr. WHITTEN. Would the gentleman yield to me on the earlier point?

Mr. PHILLIPS. Which one?

Mr. WHITTEN. About the TVA restricting or limiting the rates at which power is sold by the distributors to the ultimate consumers, as I understand the question, does not the TVA act itself require that the power generated should be distributed on a basis of seeing that the benefits of TVA power production be reflected to ultimate consumers?

Mr. PHILLIPS. Off the record.

(Discussion off the record.)

Mr. SWIDLER. The act says that the power shall be sold in such a way as—

will permit domestic and rural use at the lowest possible rates, and in such manner as to encourage increased domestic and rural use of electricity.

Mr. WHITTEN. That is the section that I recall.

Mr. PHILLIPS. My contention is that it is capable of interpretation to say that a rate need not be forced upon the people if they themselves feel they are benefiting from a different rate.

Mr. Chairman, I have only one other question.

Mr. JENSEN. Would the gentleman yield to me at this point?

Mr. PHILLIPS. Yes; gladly.

Mr. JENSEN. Would TVA or has TVA the authority to forbid a private power company, for instance, or a municipality from building their own powerplant in the Tennessee Valley?

Mr. VOGEL. Are you asking that of me?

Mr. JENSEN. Yes, or anyone who wants to answer it.

Mr. VOGEL. I do not think there is any such authority.

Mr. PHILLIPS. Has the question ever arisen?

Mr. SWIDLER. Yes; the question has arisen, and I agree with General Vogel's answer that TVA has no authority to prohibit such construction.

Mr. JENSEN. If a municipality or a private power company set out to build a powerplant in the Tennessee Valley and distribute power at a price possibly lower than the TVA rates, then what position would the TVA be in with respect to heading them off, or would they head them off or would they attempt to head them off?

Mr. VOGEL. Again, I will have to speak for myself and I would say that we would certainly not attempt to head them off, any more than we did in the case of Memphis, which decided to build its own plant within the area, and to supply the entire area of Shelby County.

Mr. JENSEN. That is all, Mr. Phillips.

CONSTRUCTION COST ESTIMATES

Mr. PHILLIPS. Mr. Chairman, I have only one more question, and that has to do with the cost. The members of the committee will remember that I have asked this same question of the Bureau of Reclamation witnesses and the Bureau of Engineers' witnesses:

Will you prepare for the record a tabulation for each of the plants built in the TVA area, showing the various estimated cost figures presented to and testified to before the several committees of the Congress from time to time by TVA officials? I now have reference to powerplants.

I like to follow, General, and see what you said at the start it was going to cost, and then follow the historical record as to how much they actually did cost.

Mr. VOGEL. It is a pretty good record, Mr. Phillips.

(The information requested follows:)

TENNESSEE VALLEY AUTHORITY

Comparison of estimates with final costs, major multiple purpose, and power projects constructed by TVA

SUMMARY

	Number of units		Estimate to Congress	Final cost
	Original estimate	Now installed		
Kentucky	6	5	$109,166,667	$116,302,296
Pickwick	2	6	45,961,639	43,157,011
Wilson	4	10	14,946,777	12,903,310
Wheeler	2	8	45,773,771	42,192,838
Guntersville		4	40,734,720	35,815,202
Hales Bar	2	2	22,200,000	23,105,832
Chickamauga		4	47,127,903	37,958,887
Watts Bar	3	5	38,400,000	32,976,647
Fort Loudoun	2	4	32,900,000	38,968,833
Norris	2	2	31,025,230	30,508,024
Hiwassee		2	25,383,518	[1] 22,448,637
Cherokee	3	4	38,700,000	35,275,213
Ocoee No. 3	1	1	6,600,000	7,988,050
Apalachia	2	2	20,000,000	22,558,532
Chatuge		1	7,900,000	[1] 9,351,589
Nottely		1	8,200,000	[1] 8,582,709
Fontana	3	3	48,900,000	73,303,903
Douglas	2	4	37,500,000	44,016,451
Watauga	2	2	28,900,000	31,541,053
South Holston	1	1	30,650,000	30,522,504
Boone	3	3	27,500,000	27,191,574
Fort Patrick Henry	2	2	13,000,000	12,419,842
Watts Bar steam	2	4	20,000,000	18,866,876
Johnsonville steam	3	6	98,000,000	94,284,219
Widows Creek steam	2	6	103,000,000	[1] 92,967,000
Kingston steam	4	9	213,000,000	[1] 199,500,000
Colbert steam	2	4	110,500,000	[1] 104,500,000
Shawnee steam	6	10	216,500,000	[1] 216,000,000
Gallatin steam	2	2	85,000,000	[1] 81,500,000
John Sevier steam	2	3	96,000,000	[1] 87,500,000
Total			1,663,470,225	1,634,207,032

[1] These projects are substantially complete but as final costs have not been determined the estimates in TVA's congressional budget for fiscal year 1957 are used.

NOTE.—This shows an underrun of $29,263,193 on $1,663,470,225 or approximately 1.8 percent.

DETAILS

	Estimates to Congress			Actual	
	Fiscal year	Units	Amount	Cost	Units
Kentucky	1938	1–6	$112,000,000	$116,302,296	1–5
		6	−2,833,333		
Total Kentucky		1–5	109,166,667	116,302,296	1–5
For comparative purposes 1 unit at the estimate contained in the congressional hearings of $2,833,333 has been subtracted.					
Pickwick	1936 [1]	1–2	32,529,685	29,701,267	1–2
	1942	3–4	4,531,954	4,326,530	3–4
	1950	5–6	8,900,000	9,129,214	5–6
Total Pickwick		1–6	45,961,639	43,157,011	1–6

[1] TVA's March 1936 Report to Congress.

Comparison of estimates with final costs, major multiple purpose, and power projects constructed by TVA—Continued

DETAILS—Continued

	Estimates to Congress			Actual	
	Fiscal year	Units	Amount	Cost	Units
Wilson	1942	9–12	$5,323,997		
	1943	13–16	5,505,280		
	1947	17–18	4,117,500		
Total Wilson		9–18	14,946,777	$12,903,310	9–18
The Wilson project, including 8 generating units, was constructed by the Army prior to the creation of TVA. The installation of these 10 units by TVA was a continuous construction operation and the costs of individual units are not separable. The estimate for units 17 and 18 was not reported separately to Congress and is derived from TVA's internal authorization procedure.					
Wheeler	1936 [1]	1–2	32,116,537	29,294,720	1–2
	1937	3–4	3,572,234	3,225,311	3–4
	1942	5–6	4,200,000		
	1948	7–8	5,885,000		
		5–8	10,085,000	9,672,807	5–8
Total Wheeler		1–8	45,773,771	42,192,838	1–8
The installation of units 5 to 8 was a continuous construction operation and the cost of individual units cannot be separated. The estimate for 7th and 8th units was not reported separately to Congress and is derived from TVA's internal authorization procedure.					
Guntersville	1936 [1]		29,500,000		
	1937	1–2	4,623,660		
	1939	3	2,211,060		
		1–3	36,334,720	31,098,760	1–3
	1949	4	4,400,000	4,716,442	4
Total, Guntersville		1–4	40,734,720	35,815,202	1–4
The installation of units 1–3 was a continuous operation and the costs by units are not separable.					
Hales Bar	1941		7,000,000	8,808,242	
	1950	15–16	15,200,000	14,297,590	15–16
Total, Hales Bar		15–16	22,200,000	23,105,832	15–16
Hales Bar Dam including 14 generating units was acquired by purchase. The 1941 item includes dredging, stopping leakage, and raising the crest elevation.					
Chickamauga	1936 [1]		31,650,000		
	1937	1–2	8,785,645		
	1939	3	2,692,258		
		1–3	43,127,903	33,730,996	1–3
	1949	4	4,000,000	4,227,891	4
Total, Chickamauga		1–4	47,127,903	37,958,887	1–4
The installation of units 1–3 was a continuous operation and the costs are not separable.					
Watts Bar	1940	1–3	35,000,000		
	1943	4–5	3,400,000		
Total, Watts Bar		1–5	38,400,000	32,976,647	1–5
The construction was a continuous operation and the costs by units are not separable.					

[1] TVA's March 1936 Report to Congress.

Comparison of estimates with final costs, major multiple purpose, and power projects constructed by TVA—Continued

DETAILS—Continued

	Estimates to Congress			Actual	
	Fiscal year	Units	Amount	Cost	Units
Fort Loudoun	1941	1–2	$28, 500, 000	$34, 940, 739	1–2
	1942	3–4	4, 400, 000	4, 028, 094	3–4
Total Fort Loudoun		1–4	32, 900, 000	38, 968, 833	1–4
The original estimates provided for units of 24,000 kilowatts each while those actually installed were 32,000 kilowatts each.					
Norris	1936 [1]	1–2	36, 025, 230	30, 508, 024	1–2
Less town of Norris, etc			−5, 000, 000		
Total Norris		1–2	31, 025, 230	30, 508, 024	1–2
Hiwassee	1936 [1]		15, 250, 000		
	1939	1	4, 233, 518		
		1	19, 483, 518	15, 922, 639	1
	1953	2	5, 900, 000	6, 526, 000	2
Total Hiwassee		2	25, 383, 518	22, 448, 637	2
Unit 2 is substantially complete—the actual cost figure shown is TVA's estimate in its budget request for fiscal year 1957.					
Cherokee	1941	1–3	34, 500, 000	29, 765, 267	1–2
Eliminate unit		3	−3, 000, 000		
	1951	3	3, 200, 000		
	1952	4	4, 000, 000		
		3–4	7, 200, 000	5, 509, 946	3–4
Total Cherokee		1–4	38, 700, 000	35, 275, 213	1–4
The installation of unit 3 was stopped by WPB in October 1942.					
Ocoee No. 3	1942	1	6, 600, 000	7, 988, 050	1
Emergency wartime construction.					
Apalachia	1942	2	20, 000, 000	22, 558, 532	2
Emergency wartime construction.					
Chatuge	1942		5, 000, 000	7, 036, 589	
	1953	1	2, 900, 000	2, 315, 000	1
Total Chatuge		1	7, 900, 000	9, 351, 589	1
The original construction was for storage only without generating facilities. The construction was under wartime emergency conditions. The unit is complete but final cost has not been determined; the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					
Nottely	1942		5, 000, 000	5, 379, 709	
	1953	1	3, 200, 000	3, 203, 000	1
Total Nottely		1	8, 200, 000	8, 582, 709	1
The original construction was for storage only without generating facilities. The construction was under wartime emergency conditions. The unit is complete but final cost has not been determined; the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					
Fontana	1942	1–3	48, 000, 000	69, 043, 688	1–2
Eliminate unit		3	−3, 000, 000		
	1951	3	3, 900, 000	4, 260, 215	3
Total Fontana		1–3	48, 900, 000	73, 303, 903	1–3
Emergency wartime construction; unit 3 was stopped by WPB in October 1942. As construction progressed, estimates of $62,000,000 $70,000,000 and finally $73,000,000 in budget for 1946 were presented to Congress.					

[1] TVA's March 1936 Report to Congress.

Comparison of estimates with final costs, major multiple purpose, and power projects constructed by TVA—Continued

DETAILS—Continued

	Estimates to Congress			Actual	
	Fiscal year	Units	Amount	Cost	Units
Douglas	1942	1–2	$30,500,000	$39,496,985	1–2
	1944	3	3,000,000	1,572,514	3
	1952	4	4,000,000	2,946,952	4
Total Douglas		1–4	37,500,000	44,016,451	1–4
The construction was under emergency wartime conditions. An estimate for unit 3 was not identified in the data furnished Congress so the average price of $3,000,000 was used.					
Watauga	1947	1–2	28,900,000	31,541,053	1–2
An estimate of $25,000,000 was submitted in 1942 but work was stopped by WPB before any significant amount had been done.					
South Holston	1948	1	30,650,000	30,522,504	1
An estimate of $23,000,000 was submitted in 1942 but work was stopped by WPB before any significant amount had been done.					
Boone	1951	1–3	27,500,000	27,191,574	1–3
Fort Patrick Henry	1951	1–2	13,000,000	12,419,842	1–2
Watts Bar steam plant	1941	1–2	10,500,000		
	1942	3	4,500,000		
	1942	4	5,000,000		
Total Watts Bar steam		1–4	20,000,000	18,866,876	1–4
The construction was a continuous operation and the costs by units are not separable.					
Johnsonville steam plant	1949	1–3	54,000,000		
	1950	4	15,000,000		
	1951	5–6	29,000,000		
Total Johnsonville		1–6	98,000,000	94,284,219	1–6
The construction was a continuous operation and the costs by units are not separable.					
Widows Creek steam plant	1950	1–2	36,000,000		
	1951	3–4	33,500,000		
	1952	5–6	33,500,000		
Total Widows Creek		1–6	103,000,000	92,967,000	1–6
The construction was a continuous operation and the costs by units are not separable. This plant is in full operation but minor items are incomplete; the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					
Kingston steam plant	1951	1–4	85,000,000		
	1953	5–6	51,000,000		
	1953	7–8	51,000,000		
	1954	9	26,000,000		
Total Kingston		1–9	213,000,000	199,500,000	1–9
The construction was a continuous operation and the costs by units are not separable. This plant is in full operation but minor items are incomplete; the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957. Units 1–4 are 135,000 kilowatts and units 5–9 are 180,000 kilowatts each (nameplate rating).					
Colbert steam plant	1952	1–2	47,000,000		
	1953	3–4	63,500,000		
Total Colbert		1–4	110,500,000	104,500,000	1–4
The construction was a continuous operation and the costs by units are not separable. This plant is in full operation but minor items are incomplete—the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957. Units 1–2 were planned to be rated at 135,000 kilowatts each but at the time units 3–4 were added all 4 units were changed to 180,000 kilowatts each (nameplate rating).					

Comparison of estimates with final costs, major multiple purpose, and power projects constructed by TVA—Continued

DETAILS—Continued

	Estimates to Congress			Actual	
	Fiscal year	Units	Amount	Cost	Units N
Shawnee steam plant	1951	1–6	$108,500,000		
	1953	7–8	60,000,000		
	1953	9–10	48,000,000		
Total Shawnee		1–10	216,500,000	$216,000,000	1–10
The construction was a continuous operation and the costs by units are not separable. Units 1–9 are in operation and unit 10 is scheduled for operation in 1956. The amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					
Gallatin steam plant	1953	1–2	85,000,000	81,500,000	1–2
This plant is nearing completion and the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					
John Sevier steam plant	1953	1–2	67,000,000		
	1954	3	29,000,000		
Total John Sevier		1–3	96,000,000	87,500,000	1–3
The construction was a continuous operation and the costs by units are not separable. This plant is in full operation but minor items afe incomplete; the amount in the actual column is TVA's estimate in its budget request for fiscal year 1957.					

Mr. WHITTEN. Would the gentleman yield to me at this point?

Mr. PHILLIPS. I have concluded, Mr. Whitten.

Mr. KIRWAN. If you have concluded, I would like to tell the gentlemen to try to have the transcript ready by Tuesday for the committee. If you cannot, continue to work on it, and have what you can ready. Have what you can ready and in here by Tuesday.

Mr. KAMPMEIER. Thank you, sir. I hope we can get the bulk of it in by Tuesday.

Mr. KIRWAN. Get the bulk of it in and put any additional information which you have not assembled by Tuesday into the transcript after that date.

Mr. Jensen?

Mr. JENSEN. General, I have a number of questions here, and for the sake of time I am going to ask that the answers be furnished for the record in every instance. I am asking you these questions even though, without a doubt, some of them have been asked before, and possibly today or yesterday, but I would like to get all of these questions in and have answers prepared to them so we can give the readers of the hearings sort of a quick bird's-eye view of the things which I think are essential in order to get a sort of a comprehensive picture of the activities of the Tennessee Valley Authority.

The first question is as follows:

APPROPRIATIONS TO DATE FOR TVA

Please furnish for the record the total amount of money which Congress has appropriated for TVA up to and including fiscal year 1956, and then your request for 1957.

(The information requested follows:)

Appropriations to date for all purposes	$1, 932, 267, 581
Appropriation requested for 1957	5, 357, 000
Rescission of prior appropriations (1957 budget)	−6, 500, 000
Estimated appropriations through June 30, 1957	1, 931, 124, 581

NOTE.—Excludes $3,500,000 supplemental appropriation included in the second supplemental appropriation bill, 1956, action on which has not been completed by the Congress.

REPAYMENTS

Mr. JENSEN. Please furnish for the record the total amount repaid up to and including fiscal year 1955, and the estimate which will be repaid in fiscal year 1956 and 1957.

(The information requested follows:)

	Bonds	Other	Total
PAYMENTS ON POWER INVESTMENT			
Paid prior to passage of Government Corporations Appropriation Act, 1948	$8, 572, 500	$15, 059, 019	$23, 631, 519
Paid subsequent to passage of Government Corporations Appropriation Act, 1948:			
Through fiscal year 1955	42, 500, 000	85, 000, 000	127, 500, 000
Estimated fiscal year 1956	14, 000, 000	45, 000, 000	59, 000, 000
Estimated fiscal year 1957		75, 000, 000	75, 000, 000
Total estimated power payments through fiscal year 1957	65, 072, 500	220, 059, 019	285, 131, 519
Nonpower payments:			
Paid through fiscal year 1955		27, 504, 371	27, 504, 371
Estimated fiscal year 1956		7, 263, 895	7, 263, 895
Estimated fiscal year 1957		6, 587, 000	6, 587, 000
Total estimated nonpower payments through fiscal year 1957		41, 355, 266	41, 355, 266
Total estimated payments through fiscal year 1957	65, 072, 500	261, 414, 285	326, 486, 785

EXPENDITURES FOR POWER PRODUCING AND TRANSMITTING FACILITIES

Mr. JENSEN. Please furnish for the record the total amount expended for power producing and transmitting facilities up to and including fiscal year 1955, your estimate for 1956 and your request for 1957.

(The information requested follows:)

Total invested in power generation, transmission, and general facilities (includes properties transferred, funds provided by appropriations, bond proceeds, and invested revenues)

[In thousands]

	1955 actual	1956 estimate	1957 estimate
Completed fixed assets	$1, 378, 831	$1, 690, 544	$1, 736, 304
Less reserves for depreciation	168, 212	204, 692	245, 390
Net completed fixed assets	1, 210, 619	1, 485, 852	1, 490, 914

KILOWATT-HOURS MARKETED, 1955–57

Mr. JENSEN. Furnish for the record the total kilowatt-hours marketed in fiscal year 1955, your estimate for 1956 and 1957.

(The information requested follows:)

Sales of electric energy, exclusive of interdivisional deliveries (approximately 0.7 billion kilowatt-hours a year) totaled 41.4 billion kilowatt-hours in 1955 and are estimated to total 53.3 billion kilowatt-hours in 1956 and 56.6 billion kilowatt-hours in 1957.

KILOWATT HOURS AND RATES

Mr. JENSEN. Please furnish for the record the kilowatt-hours of power sold to preferred customers in those years, and the average rate charged.

(The information requested follows:)

Sales to municipalities and cooperatives

Fiscal year	Billions of kilowatt-hours	Mills per kilowatt-hour
1955	13.6	4.3
1956 (estimate)	15.6	4.3
1957 (estimate)	17.4	4.3

Mr. JENSEN. Kilowatt-hours sold to industry, and the average rate charged?

(The information is as follows:)

Direct sales to industries (firm and interruptible power)

Fiscal year	Billions of kilowatt-hours	Mills per kilowatt-hours
1955	6.0	3.9
1956 (estimate)	7.3	3.8
1957 (estimate)	8.4	3.9

Mr. JENSEN. Kilowatt-hours sold to defense plants, and the average rate charged?

(The information follows:)

Sales to Federal agencies

Fiscal year	Billions of kilowatt-hours	Mills per kilowatt-hour	Fiscal year	Billions of kilowatt-hours	Mills per kilowatt-hour
A. Firm power under long-term contracts:			B. Power from supplemental sources:		
1955	11.6	3.7	1955	10.1	5.9
1956 (estimated)	21.3	3.8	1956 (estimated)	9.1	4.8
1957 (estimated)	25.7	3.8	1957 (estimated)	5.0	4.5

Mr. JENSEN. Did I ask you for kilowatt-hours sold to preferred customers?

Mr. VOGEL. Yes, sir.

REVENUE FROM POWER

Mr. JENSEN. The total revenue from power; actual for fiscal year 1955 and the estimate for 1956 and 1957?
(The information follows:)

Revenues received from outside sales of electric energy totaled $184,867,503 in 1955 and are estimated at $218,330,000 in 1956 and $228,980,000 in 1957. These figures exclude revenues from interdivisional sales and rents, incidental income from recovery of operating expenses, etc. Total revenues of the power program were $188,162,989 in 1955, and are estimated at $221,555,000 in 1956 and $232,074,000 in 1957.

REVENUE FROM FERTILIZER

Mr. JENSEN. The total revenue from fertilizers for those years?
(The information follows:)

Income from fertilizer sales totaled $19,490,769 in 1955 and is estimated at $19,758,000 in 1956, and $18,249,000 in 1957. These figures exclude income from the sale of phosphorus, byproducts, income from the partial pay plan (test-demonstration fertilizer). Total income originating in the fertilizer and munitions development program was $20,458,840 in 1955 and is estimated at $21,991,000 in 1956 and $20,646,000 in 1957.

OTHER REVENUES

Mr. JENSEN. The other revenues?
(The information follows:)

Income from navigation operations, multipurpose reservoir operations, resource development, reimbursable services, sale of retired plant, and other miscellaneous receipts totaled $8,186,640 in 1955 and is estimated at $6,305,000 in 1956 and $5,062,000 in 1957.

TONS OF FERTILIZER SOLD

Mr. JENSEN. The actual total tons of fertilizers sold in fiscal year 1955, and the estimate for 1956 and 1957?
(The information follows:)

Sales of TVA fertilizers (concentrated superphosphate, calcium metaphosphate, ammonium nitrate, diammonium phosphate, and fused tricalcium phosphate, which was discontinued in 1955) totaled 346,931 tons in 1955, and are estimated at 318,303 tons in 1956, and 287,210 tons in 1957.

NUMBER OF TEST FARMS

Mr. JENSEN. The actual number of test farms in fiscal year 1955 and the estimate for 1956 and 1957?
(The information follows:)

Test-demonstration farms

	Active valley farms	Active nonvalley farms	Total active farms
Actual, 1955	2,110	783	2,893
Estimate, 1956	1,731	776	2,507
Estimate, 1957	2,060	1,444	3,504

Mr. EVINS. Will the gentleman yield at that point?

Mr. JENSEN. Yes.

Mr. EVINS. All of that information, I might say to my colleague, is provided in the justifications; on the latter part on the test farms.

Mr. JENSEN. I just wanted to get it all together. It is not going to take long.

HOMES HEATED WITH TVA POWER

The number of homes heated with TVA power; actual in 1955 and estimated in 1956 and 1957; and the average rate charged?

(The information follows:)

The number of homes heated by electricity was approximately 132,000 in fiscal year 1955, and the estimated number is 155,000 in 1956 and 180,000 in 1957. The consumer pays approximately 7 to 7½ mills per kilowatt-hour, on the average.

NUMBER OF EMPLOYEES

Mr. JENSEN. The number of employees you had at your last accounting. That possibly would be March or April 1 of this year.

(The information follows:)

As of March 31, 1956, TVA employment totaled 14,387.

Mr. JENSEN. None of the TVA employees are under civil service, are they?

Mr. VOGEL. No. Some of them are under the civil service retirement system.

Mr. JENSEN. How many? Put that number in, whatever it is.

Mr. VOGEL. It is a very small number.

Mr. JENSEN. Show the number of employees of the Tennessee Valley Authority who are under civil service.

Mr. VOGEL. Those, you understand, are the ones who have had civil service status and have come in and remained in its retirement system.

Mr. JENSEN. You can explain that.

Mr. VOGEL. We can give that.

(The following information was submitted later:)

All TVA employees are under the TVA merit system and in accord with the TVA Act are not under civil service. On March 31, 1956, TVA had 372 employees who at time of employment were under the civil service retirement system and who remain under that system.

PAYMENTS IN LIEU OF TAXES AND POWER DISTRIBUTOR PAYMENTS

Mr. JENSEN. The local and State taxes paid in calendar year 1955 and the estimate for 1956 and 1957.

(The following was submitted later:)

TVA pays no local and State taxes. Note, however, payments in lieu of taxes listed in response to the next question.

Mr. JENSEN. The amount of money paid to States in the Tennessee Valley area in lieu of taxes.

Mr. VOGEL. Do you want that to include also taxes paid by the distributors of TVA power; or just TVA's payments in lieu of taxes?

Mr. JENSEN. Just TVA's payment in lieu of taxes.

Mr. VOGEL. You see, TVA makes a payment in lieu of taxes and then its distributors also make a payment in lieu of taxes.

Mr. JENSEN. Just give me what TVA pays.

Mr. EVINS. I am sure the gentleman will want to be fair and include also taxpayments by distributors.

Mr. JENSEN. What is that?

Mr. EVINS. Do you want to include the distributor angle; taxpayments?

Mr. JENSEN. Do you want that?

Mr. EVINS. I think since you are getting it all you ought to get that, too.

Mr. JENSEN. All right.

(The information requested is as follows:)

	TVA in lieu payments	Power distributor payments	Total payments
Actual, 1955	$3,878,466	$6,192,400	$10,070,866
Estimate, 1956	4,152,000	7,000,000	11,152,000
Estimate, 1957	4,786,000	8,000,000	12,786,000

Mr. JENSEN. The TVA pays no Federal taxes on its revenues from power, does it?

Mr. VOGEL. No, sir.

Mr. JENSEN. Or from fertilizers?

Mr. VOGEL. No, sir.

Mr. JENSEN. They pay no Federal taxes. All right.

I have just a last question, and I am sure you can answer it now.

Is it not a fact that if TVA power were today sold only to preferred customers and to defense plants that TVA today would have a surplus of power?

Mr. VOGEL. That is correct, sir.

Mr. JENSEN. Thank you. That is all, Mr. Chairman.

Mr. KIRWAN. Mr. Hand?

Mr. EVINS. Would the gentleman yield for an observation at this time?

Mr. HAND. I would yield gladly.

Mr. EVINS. Thank you. I just want to say for the record that I have been in Congress for several years. Of course, I have been on this committee only 2 years.

This is the most far-reaching and must belaboring and searching and demanding and scathing inference inquiry of an agency of government that I have ever witnessed. I deplore this belaboring and hampering of this agency in its operation and work.

This is an appropriations committee and not a legislative committee. It is not an investigating committee.

Mr. JENSEN. It is not?

Mr. EVINS. We are not a special committee set up for investigating the TVA. We are here to inquire into its annual fund needs.

Mr. JENSEN. That is our duty and your duty.

Mr. KIRWAN. Let me answer that.

Mr. EVINS. I have not finished my observation.

It seems that when any irrelevent matter comes up, they say "Put it in" and "Put it in the record, including the kitchen sink, that will keep them busy."

I just want to make one further observation regarding these excessive demands for information.

Mr. PHILLIPS. Does the gentleman not think we should be thorough?

Mr. KIRWAN. Let me say this——

Mr. TABER. I am sorry that the gentleman feels everything should be covered up.

Mr. KIRWAN. The chairman has nothing to do with another member stopping a member, of course.

Mr. EVINS. I understand that, Mr. Chairman.

Mr. KIRWAN. I want to say this, on the questions Mr. Jensen asked.

If the Tennessee Valley Authority can and will come up with the answers, and the answers will stand the acid test, you should be the proudest fellow in the world. I am in favor of asking them questions, but if they can stand the acid, you can ask them questions here for 3 weeks and I am for it.

Mr. EVINS. That is fine, Mr. Chairman. I am sure TVA can stand the acid test. But the test should be a fair one.

Mr. HAND. Mr. Chairman, may I proceed?

Mr. KIRWAN. Yes, but I have to leave. I am going to catch a plane.

Mr. JENSEN. Mr. Chairman?

Mr. EVINS. May I make one further comment?

Mr. JENSEN. Mr. Chairman, I ask unanimous consent to take the remarks I made out of the record.

(Reporter's note: Remarks removed.)

Mr. EVINS. I will ask unanimous consent that I be allowed to modify my remarks.

Mr. KIRWAN. Go ahead.

Mr. WHITTEN. I would like to join with the gentleman; that I too agree that any number of questions and any information needed I have always thought was in order.

Like most of us, I ask questions, and I think the list of questions should be as thorough and searching as they need to be, and I think certain other questions might well be asked to round out the full story. It always happens that way.

I would like to ask the chairman, at such time as it comes around to me, that I be permitted to ask further questions to show any further phases of the matter.

Mr. KIRWAN. Certainly. Any Member of Congress in the room can ask all the questions he wants, the way I see it, even if we are here until next week. That is his privilege.

Mr. EVINS. Mr. Chairman, my question is directed as to whether or not all of this information could be supplied for the record during the time limited for printing the transcript of hearings.

Mr. KIRWAN. Off the record.

(Discussion off the record.)

Mr. VOGEL. Mr. Chairman, may I make an observation and ask a question? I think as an observation the questions which have been asked are very reasonable and the answers will be quite easy to obtain. However, in order to get started on this tonight, to get on this work, I would like to ask whether we may have your list to work from, Mr. Jensen?

Mr. JENSEN. I just scribbled them down.

Mr. VOGEL. We would have to wait for the record otherwise.

Mr. JENSEN. I do not think you could read my list.

Mr. VOGEL. We have some of them down, of course.

Mr. JENSEN. Do not worry about the reporter; he has every word.

Mr. KIRWAN. I have to leave now. Mr. Evins, will you take over as Chairman?

Mr. EVINS. The gentleman from New Jersey is recognized.

Mr. HAND. I thank the Chair.

FORMULA FOR DIVISION BETWEEN CORPORATE AND APPROPRIATED FUNDS

General, one thing I should have known, I expect, some time ago—but which I never have gotten quite clear in my mind—is: What is your precise formula for the division in your costs between the allocation of appropriated funds and corporate funds? What formula binds you in your calculations?

Mr. VOGEL. I do not think there is any precise formula on that. Sometimes it is one thing and sometimes another. The matter is discussed and the decision arrived at frequently in the preliminary discussions with the Bureau of the Budget, as to what would be the most appropriate procedure.

Mr. HAND. If, for example, you use X million dollars in corporate funds and a comparatively small amount of appropriated funds, who decides that, and why, and under what formula, if any? There is no formula?

Mr. VOGEL. There is no specific formula for it. Those things generally are in the nature of contributing to the resource development in recent years and have been supported largely out of the revenues from fertilizer sales.

Mr. SWIDLER. Mr. Hand, perhaps I can add something on this point.

The purposes for which corporate funds may be used are limited by the TVA Act, so that there are categories of expenditures which can be made only from appropriations, and if no appropriations are made for those activities they cannot be carried on.

Now, other activities—fertilizers for one, and power for another—may be carried on with either appropriations or revenues. In the case of power in general, revenues are used as far as they will go. They cover all operating expenses, of course, are capital investments to the extent they are available, taking into consideration the requirements for payments into the Treasury.

The Treasury payment is a figure which is determined upon by the Board, and we receive, of course, the views of the Bureau of the Budget upon it. Whatever amounts of net power revenues are left over are applied to the requirements for power purposes and the balance of requirements is secured from appropriations.

Mr. HAND. Then, No. 1, we have this situation: There are certain types of items or categories which can be taken from corporate funds and certain of course which cannot. That is one limitation on them?

Mr. SWIDLER. That is right.

Mr. HAND. The second limitation is that you have a certain amount of repayment to make, which must come from corporate funds. Do I understand that you take all that is left from corporate funds and request appropriations for the balance?

Mr. SWIDLER. I think that is substantially correct.

Mr. HAND. Substantially?

Mr. SWIDLER. There is some flexibility, for example, on the amount of the payment to the Treasury. You understand with respect to corporate funds, in the case of power activities, we are talking only about the revenues received from the power operations.

Mr. HAND. To that extent there are certain rules which guide you. You do not just guess at these figures?

Mr. SWIDLER. No, sir.

Mr. HAND. Is it discussed with the Bureau of the Budget before the presentation is made to this committee?

Mr. SWIDLER. Yes, sir. These figures are submitted to the Congress by the President. The Bureau of the Budget holds a hearing with agency representatives before the Bureau submits its budget to the President for transmittal to Congress.

Mr. HAND. In other words, you obtain first, necessarily, the approval of the Bureau of the Budget and the President both with respect to the total figures and also the division between corporate funds and appropriated funds?

Mr. SWIDLER. Yes, sir.

Mr. HAND. Is that correct?

Mr. SWIDLER. This budget is the President's budget.

CAPITAL INVESTMENT

Mr. HAND. I do not know whether we have had this in the hearings or not, but what has been the total capital invested in TVA from the beginning; in other words what is the total capital investment? If that is not readily obtainable I would be happy to have it supplied.

Mr. VOGEL. I can give you a round figure, but I think we had better give it later.

Mr. HAND. Give it in round figures now and correct it later.

Mr. VOGEL. It was around $2 billion, in 1954.

In 1955 it was $2,035,395,361.

Mr. HAND. Of that how much is appropriated funds?

Mr. VOGEL. Through 1955, $1,822,854,639.

Mr. HAND. That is the total of appropriated funds?

Mr. VOGEL. Yes, sir; $1,822,854,639 is the total appropriations and property transfers less payments to the Treasury as of June 30, 1955.

Mr. HAND. I will not ask you about repayments, since those you have already made from the beginning until now are scheduled on page 126 of your justifications.

Mr. VOGEL. That is correct, sir.

Mr. HAND. That is schedule C–1—I guess it is.

Mr. VOGEL. Yes, sir; schedule C–1. That is the repayment of power proceeds.

POWER PRODUCTION

Mr. HAND. As of now, General, what is the percentage of your production of power with respect to hydropower and thermal power?

Mr. VOGEL. It is very close to one-third and two-thirds. Two-thirds thermal and one-third hydro.

Mr. HAND. Approximately two-thirds thermal?

Mr. VOGEL. Yes, sir.

Mr. HAND. And one-third hydro?

Mr. VOGEL. Yes, sir.

Mr. HAND. That is close enough so that we will not need to have that corrected?

Mr. VOGEL. That is within a couple of percent one way or the other.

Mr. HAND. I have just 2 or 3 minor questions on things I do not understand about your so-called resources development. I think you yourself were inclined to criticize the name as a little vague.

Mr. VOGEL. It is a little too broad for what we do there; yes, sir.

RESOURCE DEVELOPMENT

Mr. HAND. Among other things under that heading that I observe you do is to make some investigation of the reason for low-income farming in that area, is that correct, General?

Mr. VOGEL. Yes, sir.

Mr. HAND. Is not an investigation of that character also being carried on by the Department of Agriculture?

Mr. VOGEL. I think so. I do not know just to what extent they go beyond what we are doing, but they have used a considerable amount of our information, which was supplied to them.

Mr. HAND. And is there not presently being conducted or about to be instituted by the Department of Labor a similar investigation?

Mr. VOGEL. Yes, sir; I understand so. I presume in that case we will either furnish the data to them, as we do in the case of the Department of Agriculture, or they will not procure it themselves in that area. It would be our intent to avoid duplication, sir.

Mr. HAND. Would it not be reasonable for the committee to assume that there must be duplication among these three departments, all of whom are investigating this same thing?

Mr. VOGEL. I can see why you might be apprehensive of that, but I would like to say that we will guard against it.

Mr. HAND. You are also engaged in surveying soils and soil characteristics in the valley, are you not, General?

Mr. VOGEL. Yes, sir, in related activities.

Mr. HAND. Is that not being carried on by the Department of Agriculture?

Mr. VOGEL. They are also carrying on some of that activity, but in our particular area our current efforts are directed entirely toward farmers' utilizing the information which the soil maps contain.

Mr. HAND. We discussed yesterday, I think it was, a couple of forest programs; one for planting new seedlings, and another sort of a general program. Will you refresh my memory on how much is in your present budget for the purpose of planting seedlings?

Mr. VOGEL. $129,000 on the seedling program.

Mr. HAND. I call your attention to the fact, General, that under the national seedling program for fiscal year 1955, which is as late as I have the figures, the State of Tennessee is getting $9,500 and the State of Georgia is getting $13,025, and so on down the list. In other words, the list that I have indicates to me that the same amount of money is being spent for this seedling program in the Tennessee Valley States as in all the other States, and yet your program is superimposed on top of that. Do you think that is a duplication of effort?

Mr. WHITTEN. Would the gentleman yield to me on that?

Mr. HAND. I prefer not to at the moment, but I will in just a second.

Mr. VOGEL. I do not think it is a duplication of effort, because I think this goes beyond that which is anticipated by the agency you referred to. TVA's program here is designed to put this land which has been badly eroded back into forests and help in reestablishing some of the industries which are dependent upon the production of lumber and pulpwood.

Mr. HAND. Perhaps duplication is not the right word, but at least there is an additional appropriation for the same purpose in this area; is there not?

Mr. VOGEL. It might be more than some others are getting. Our forestry man would like to comment on that.

Mr. HAND. I would be glad to hear him, because it seems to me we are adding this amount of money of yours to the program and these valley States are getting more than an equitable share of the benefits of the general program.

Mr. KILBOURNE. I see your point, sir.

This money to which you refer, goes, as I understand it, from the Department of Agriculture to the States, and is put into the State programs. The general approach of the TVA reforestation program has been to try to help the owners of small areas of land in their reforestation problem. Generally speaking the trees from the State program are in such great demand that they are more than absorbed outside of the Tennessee Valley area, with the exception of a few large companies who buy up and reforest extensive areas.

We are primarily concerned with the planting of small areas or small ownerships particularly in these badly eroded areas which I showed Mr. Taber in the photographs yesterday. They are generally parts of farms of 70 to 100 acres.

Mr. HAND. Are you planting your seedlings on privately owned land?

Mr. KILBOURNE. Yes, sir. We do not actually plant them. We make them available.

Mr. HAND. You make them available for planting?

Mr. KILBOURNE. To the State forester, who allocates them. We are primarily interested in encouraging the planting of these trees by small owners.

Mr. HAND. Is there not another general reforestation program under the aegis of the Department of Agriculture?

Mr. KILBOURNE. Actually, Mr. Hand, that is worked through the States. This money you referred to—the $9,500 and the $13,000—goes to the States. They put it into the State program.

Mr. HAND. I am talking about another program which is on a regional basis. For example, I have figures which would indicate that under that general program, just to pick out a region at random, for region 1—Montana, northeast Washington, north Idaho and so forth, North and South Dakota—there is a program in which we are spending $84,000, and under that same program in the States, or some of them, involved in this area, we are spending, as I see it, approximately $208,000 from that program, also on reforestation.

Mr. KILBOURNE. I may be wrong, Congressman Hand, but I believe it is the same program. This program is administered by the Forest Service and they subdivide it by regions. The figures which you just

quoted me, $9,500 and $13,000, are a part of what they call their region 8 program, which includes these States. I do not believe they are two separate programs.

Mr. HAND. What I am getting at, essentially, boiled down to just one question, is: Does it not seem on the surface, at least, that on top of these other programs which we have throughout the Nation, including the Tennessee Valley, that we are superimposing an extra and additional program and benefits in the Tennessee Valley through your funds? Is that not so?

Mr. KILBOURNE. On seedlings, I think that is right; yes, sir.

Mr. HAND. Does the gentleman want me to yield?

Mr. WHITTEN. A question was asked yesterday about the limit of $500,000 to the Forestry Department for planting seedlings in the United States; that is a limit on how much the Forestry Department can spend on Federal lands in national forests.

The only seedling program for the country is under the ACP program, where there is $250 million available for all practices, where each State selects the practice that might be appropriate to that State. I just wanted to correct what came up yesterday.

Mr. KILBOURNE. Mr. Hand, may I make one more comment which is responsive to your point?

Mr. Wagner tells me that the total expenditure by the Department of Agriculture in the Tennessee Valley area is about half of the national average.

Mr. WAGNER. Total Federal expenditures per capita of farm population for land and agricultural resources programs over the past 20 years in the 7 Tennessee Valley States have been a little more than half (58 percent) of what they were in the Nation as a whole, and that would of course include forestry.

Mr. HAND. Because of expenditures you are making?

Mr. WAGNER. The Tennessee Valley figures would include our expenditures plus the expenditures of the Department of Agriculture. That is for all land and agricultural resources programs. It would include forestry, but the reforestation program would be a small part.

Mr. HAND. That does not seem to jibe with the figures I have on this seedling program or reforestation.

Mr. WAGNER. In some phase of the program per capita expenditures might be more for one area and in another phase less, but the overall picture for Federal expenditures in this field is as I described it.

Mr. HAND. I think your observation is interesting and of some importance on what I was trying to get at. I would appreciate your putting a brief memorandum in the record on that point.

Mr. WAGNER. I would be glad to do that, sir.

(The information is as follows:)

According to expenditures obtained from annual budget documents of the USDA, for the period 1934–53, the average expenditures by USDA per capita United States farm population is $1,228; the average expenditure of both USDA and TVA in the seven Tennessee Valley States is $707 per capita farm population. A similar pattern prevails when total Federal expenditures for all purposes during the same period are considered. For the United States as a whole, Federal expenditures for the 20-year period were $5,430 per capita and in the Tennessee Valley States they were $2,600 per capita.

Mr. HAND. That is all.

Mr. TABER. I do not think I have any questions.

POSSIBLE DUPLICATION WITH DEPARTMENT OF AGRICULTURE

Mr. WHITTEN. I would like to point out in connection with Mr. Hand's statement, since I have served as chairman of the Subcommittee on Agriculture for a long time, at which time I was also on the committee handling the TVA, that I personally, in the two subcommittees, have cooperated always in trying to keep the Department of Agriculture in a position where we were not duplicating the work of the TVA. In fact, they do much of the same work but in different territories. What the Department of Agriculture does in certain areas the TVA does in its particular area, so while there may be some crossing of lines I personally think it has worked very well.

FERTILIZER ECONOMICS

Since a number of questions have been asked about TVA work with fertilizer research and promotion I ask that the following letter from TVA be inserted in the record.

(The letter is as follows:)

APRIL 27, 1956.

Hon. JAMIE L. WHITTEN,
House Office Building,
Washington, D. C.

DEAR MR. WHITTEN: Recently you asked for some background information on a statement by Dr. Joseph Ackerman, Managing Director of the Farm Foundation, relative to fertilizer economics. He said that in the new field of fertilizer economics TVA is "setting the pace in the integration of viewpoints and developments with the end result of benefiting all farmers." Dr. Ackerman was talking about part of our fertilizer economics research work which seeks an answer to this question: "What kinds and amounts of fertilizer will give a farmer the best return for his investment, when all the factors which bear on his farm income are considered?"

Before World War II, the economics of fertilizer use received little attention or study. The fertilizer industry was small, and chemical fertilizer was a minor factor in farm production on many farms. The large output of our Nation's farms during World War II gave chemical fertilizers a new prominence as natural soil fertility levels declined. To meet the needs for plant nutrients, the chemical fertilizer industry expanded. The knowledge of how to use these fertilizers, however, did not increase at the same pace. When farmers began to ask questions about the most economical use of fertilizers, they were not able to get meaningful answers. Agricultural economists had not pushed research in this field, and soil scientists had not designed their fertilizer experiments so that economists could use the results to determine the best returns for dollars spent on fertilizer. TVA recognized this blind spot in the information on production planning available to farmers. We concluded that a coordinated attack had to be made on these fertilizer problems by research workers in agricultural economics, soil science, and statistics—groups that had ordinarily not worked together on farm problems.

The first job was to bring these groups together to find out what contribution each had made or could make to problems related to the economic aspects of fertilizer use. TVA did this in a conference in June 1953 attended by representatives of 11 southern land-grant colleges, the USDA, the Farm Foundation, and TVA. We found that not only were important questions unanswered—the methods for finding answers to these questions were yet to be discovered. The June 1953 meeting aroused curiosity of those in attendance and some of them started new work in the economics of fertilizer use. TVA undertook cooperative research projects with Iowa State College and the University of Tennessee to develop some of the research methods which were required before a start could be made on solving the problem itself. A followup meeting sponsored by TVA in January 1954 at Muscle Shoals, Ala., disclosed that the necessity for research in the economics of fertilizer use had caught on. Prospects for further work appeared excellent. Answers to important economic questions that were bothering farmers about the use of fertilizer seemed nearer.

There still appeared to be one major gap in the work. This problem related to research methods. To help overcome this obstacle, in June 1955 TVA sponsored a symposium on research methods on the economic analysis of fertilizer use data. Representatives of 19 land-grant colleges, the USDA, 5 major fertilizer industry firms, and 3 foreign countries attended. The technical papers presented by outstanding agricultural economists, soil scientists, and statisticians have been published in book form by the Iowa State College press.

To encourage and sustain the growing interest in this field of work, TVA sponsored another meeting on the subject in March 1956. At this meeting, discussions centered around research methods developed during 1955–56. It was gratifying to witness the marked increase in interest in this kind of agricultural research. Agricultural economists, soil scientists, and statisticians submerged individual interests and cooperatively explored new techniques that will enable agricultural workers to aid farmers in getting the maximum returns for each dollar spent for fertilizer. It was at this meeting that Dr. Ackerman made the statement about which you inquired.

TVA has undertaken additional cooperative projects in the economics of fertilizer use with North Carolina State College, Michigan State University, and Mississippi State College. We plan to develop similar projects with State colleges in the West, the Southwest, and the Northeast. This coverage will enable us to get, on a nationwide basis, information on the most economical use of fertilizers on major agricultural crops, in various cropping rotations, soils, climate, and farming systems.

Through TVA's efforts this important area of research has expanded appreciably. In 1954, only six land-grant colleges and USDA were doing any research on the economics of fertilizer use; the latter on a modest scale. Integrated research by economists, soil scientists, and statisticians in this new, and important, field of investigation is now being carried on in 14 land-grant colleges scattered throughout the United States.

As you can see, TVA has not "gone it alone" in the new field of fertilizer economics research. Our fertilizer economics work was developed in close cooperation with the land-grant colleges. The colleges are bearing a major portion of the cost of the work. At this particular time it is especially necessary for farmers to be able to secure the kinds of information that will help them get the most profitable use out of dollars spent on fertilizer and other farm expenditures. Our assistance to land-grant colleges in their efforts to solve research problems is designed to help them expand their educational activities so that ultimately economically sound and practical fertilizer recommendations can be furnished to farmers. In the process TVA is fulfilling one of its major obligations—that of reducing farmers' fertilizer costs by helping them find its best, most economical uses.

If I can give you any further information on our work in fertilizer economics research I shall be glad to do. Senator Hill has also requested information on this subject and we are sending him a similar letter.

Very truly yours,

AUBREY J. WAGNER, *General Manager.*

POWER PRIORITIES

Mr. WHITTEN. In addition to that I would like to have you make another point in the record. It has been intimated here that if you were limited to your preference customers that you would have much more than enough power. I would like to ask you: What other utility is there now operating in that area which could serve all this industry and business and other folks who might not be at the preference rate? In the territory you serve what other utility is there to serve these people?

Mr. VOGEL. There is no other existing utility serving within that area.

Mr. WHITTEN. If you were to stick to just the preference customers, how much American business would you leave—and you may have to put this in the record—without any source of supply, if you cut them off? I would like for the record to show that. It might take time to prepare it.

Mr. VOGEL. It is a rather hypothetical question. I would have to go to the basis of it. I presume you do not mean we would cut them all off?

Mr. WHITTEN. I would like to know, if you cut them all off, what it would be?

Mr. VOGEL. Actually we are talking about a 300,000-kilowatt deficiency by 1958.

Mr. WHITTEN. The original question was directed to your preference customers. I am drawing a line between preference customers and nonpreference customers.

Mr. VOGEL. The point I wish to make, Mr. Congressman—and I do not want to belabor this—is that you would not expect us to cut off people from the use of power we have available to supply them, would you?

Mr. WHITTEN. General, I think my feelings are quite evident. I am sure you know the answer to that question. I was not desiring that you cut off any of them. I am trying to get in the record how many people are in the nonpreference class who, if you were forced to cut them off, would be left without power?

(The information is as follows:)

If the question is directed to the number of consumers served directly by TVA, there are some 2 dozen large industrial establishments so served. There are a larger number of similar consumers furnished TVA power through the local distribution systems. There are approximately 5,000 in the large-consumer class, that is, with demands greater than 50 kilowatts.

Mr. PHILLIPS. Are you going beyond the contractual situation? I mean, they make a contract and in the contract there is a cancellation clause. Are you going beyond that and assuming, whether the contracts have a cancellation clause or not, if they are with industrial firms, they could be cut off?

Mr. WHITTEN. I am. If you will follow me on that, I think I will make my point clear. There is no other utility in the area, and I am wondering how many people there are that are dependent upon you as their sole source of supply at the moment, but who are not in your preference clause.

Mr. KAMPMEIER. May I ask a clarifying question there in order that we may be as responsive as possible to your question? The act speaks of preference for domestic and rural customers; are you asking how many there are in other classifications?

Mr. WHITTEN. Let me start over and strike the question. The nonpreference customers under present conditions have no other source of supply in sight except TVA. Now, some reference has been made to where cities could set up their own plants similar to Memphis. How long will it take Memphis from the time they took the first action to determine to issue bonds and go through all of the processes before they can possibly have a generation plant in readiness to serve their needs?

Mr. VOGEL. Two and a half to three years from the time first orders for equipment are placed. There would have to be other steps taken before that.

Mr. WHITTEN. If any city in this area should make that determination, it would take at least 3 years before they could possibly have another source of service; is not that correct?

Mr. VOGEL. Yes; I think that is approximately correct.

Mr. WHITTEN. I believe you testified earlier that you are in the position that not only was it necessary for TVA to expand its generating facilities to meet the load you can see but that you had to do it at these particular units if it was to be done in time to meet the needs you can see which will come as part of your demand by late 1958.

Mr. VOGEL. I think that is substantially correct.

Mr. WHITTEN. So whatever might happen if the TVA Act were changed or even if TVA were sold, or any situation developed, under all circumstances capacity must be added by adding units at the points mentioned. That is the only way to meet the power needs of the people in that area within the limited time, is it not, in your judgment?

Mr. VOGEL. Yes, I think that is correct.

INFORMATION AND DATA SUBMITTED TO CONGRESS THROUGH THE BUDGET BUREAU

Mr. WHITTEN. We all get enthusiastic on different sides of the many issues here; but in times past there have been many misunderstandings in Congress among those who have served on this subcommittee because some folks felt that TVA had not told the Congress everything of a major nature that was going on in the TVA. On numerous occasions it has developed that TVA had in fact submitted the information to the Congress, or had made preparation to submit it to the Congress; but, by virtue of our Government procedures, the information had to go through the Bureau of the Budget and, while TVA had submitted it through channels to the Congress, it had not actually reached the Congress.

I would like to ask you to put in the record the occasions where TVA has submitted information with regard to letters of intent and things of a similar nature to the Bureau of the Budget and the information did not reach Congress by failure of the Bureau of the Budget to transmit it, or for any other reason.

Mr. VOGEL. You are directing that question to the present budget, of course?

Mr. WHITTEN. I would like to say for the last 5 years. I do not criticize any agency of the Government for performing its own duties, but it does enter into the question of whether TVA has submitted or made an effort to submit things, maybe, that we have not seen, but where TVA itself is perfectly in the clear.

(The information follows:)

	Revised budget estimates for fiscal year 1956			Initial budget estimates for fiscal year 1957		
	Submitted to Bureau of the Budget	Changes made by Bureau of the Budget	President's budget for 1957	Submitted to Bureau of the Budget	Changes made by Bureau of the Budget	President's budget for 1957
Appropriate estimate:						
John Sevier steam plant unit 4 (180,000-kilowatt capacity)		$3,500,000	[1] $3,500,000			[2]
Flood-control facilities	$49,000		49,000	$691,000	−$391,000	$300,000
Multipurpose reservoir operations	2,066,000		2,066,000	2,270,000	−10,000	2,260,000
Resource development	400,000		400,000	1,287,000	−887,000	400,000
Administrative and general expenses	1,401,000		1,401,000	834,000	−80,000	754,000
Other activities	23,137,000		23,137,000	1,643,000		1,643,000
Total appropriation request	27,053,000	3,500,000	30,553,000	6,725,000	−1,368,000	5,357,000
Corporate financed obligations:						
John Sevier steam plant unit 4 (180,000-kilowatt-capacity)	3,500,000	−3,500,000		19,500,000	−19,500,000	[2]
Johnsonville steam plant units 7 and 8 (270,000-kilowatt capacity)	500,000	−500,000		8,000,000	−8,000,000	[2]
Gallatin steam plant units 3 and 4 (450,000-kilowatt capacity)	1,000,000	−1,000,000		23,000,000	−23,000,000	
Multipurpose reservoir operations	1,659,000		1,659,000	1,759,000	−6,000	1,753,000
Resource development	600,000		600,000	15,000	735,000	750,000
Administrative and general expenses	2,572,000		2,572,000	3,350,000	−4,000	3,346,000
Other activities	168,947,000		168,947,000	171,703,000		171,703,000
Total corporate financed obligations	178,778,000	−5,000,000	173,778,000	227,327,000	−49,775,000	177,552,000
Payments to U. S. Treasury:						
From power proceeds	59,000,000		59,000,000	30,000,000	45,000,000	75,000,000
From nonpower proceeds	7,263,895		7,263,895	6,587,000		6,587,000
Total payments to U. S. Treasury	66,263,895		66,263,895	36,587,000	45,000,000	81,587,000

[1] Supplemental appropriation estimate for 1956.
[2] Financing proposed to be provided by issuance of revenue bonds in accord with pending legislation.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., September 28, 1955.

Hon. ROWLAND R. HUGHES,
Director, Bureau of the Budget,
Executive Office of the President, Washington, D. C.

DEAR MR. HUGHES: We submit herewith TVA's budget program for the fiscal year 1957. We believe this program is in accord with the budget policies described in your letter of August 11, 1955.

Funds to finance the 1957 program would be derived as follows: An appropriation request of $6,725,000; funds available from prior appropriations, $16,560,000; funds provided by current income, $257,258,000; and from proceeds held in reserve, $6,656,000. Of the $287,199,000 thus provided, $92,647,000 would be used for acquisition of assets; $156,193,000 for operating expenses; $1,772,000 for increasing working capital; and $36,587,000 for payments to the United States Treasury in accord with section 26 of the TVA Act. Of the total estimated payments to the United States Treasury in 1957, $30 million will be derived from power proceeds and will bring total payments on power investment to $240 million. When the 1957 payment is made, TVA will be 43 percent ahead of an average payback schedule under the 40-year plan established by law.

The appropriation financed budget totals $23,285,000—$16,346,000 for acquisition of assets, and $6,939,000 for operating expenses of non-revenue-producing activities. These figures do not contemplate use of the $6,500,000 originally provided for transmission connections near Memphis with the Mississippi Valley Generating Co.

ACQUISITION OF ASSETS

Power.—The 1957 budget program provides $80,330,000 for power generating and transmission facilities. Of this total, $5,739,000 is derived from appropriated funds carried over and would be applied to clean up construction work on installations now nearing completion at 5 steam plants. The balance of $74,591,000 represents the application of corporate income—$50,500,000 toward the installation of 5 additional steam-electric generating units at 3 existing projects, $23,000 for cleanup construction work, and $24,068,000 for transmission system facilities. No new power-producing projects are contemplated by the 1957 budget program.

The additional generating units for which estimates are included in the 1957 budget program are Johnsonville 7–8, John Sevier 4, and Gallatin 3–4.

The completion on schedule of generating facilities now under construction will bring nameplate rating capacity in the TVA system to 10,038,485 kilowatts at the end of calendar year 1957, and 10,050,485 kilowatts at the end of calendar year 1958. The corresponding assured load-carrying ability of the TVA system is estimated to be 9,533,000 kilowatts at the end of calendar year 1957, compared with estimated demands of 9,800,000 kilowatts; and 9,543,000 kilowatts at the end of calendar year 1958, compared with estimated demands of from 10,100,000 to 10,550,000 kilowatts, depending upon the extent to which the city of Memphis has completed new generating facilities for serving its load. Therefore, unless additional capacity is started promptly, there will be deficiencies of 2.7 percent at the end of 1957, and from 5.5 to 9.5 percent at the end of calendar year 1958 The installation of five generating units at existing projects, as provided for in the 1957 budget program, would largely offset the indicated deficiencies, but would provide no substantial margins of capacity for unforeseen developments.

The John Sevier unit can be placed in operation before the end of 1957, provided construction is started promptly. The other additional units can be completed before the time of the 1958 peak demand. Addition of the Sevier unit to the system would bring the 1957 capacity within 1 percent of the anticipated power requirements. Depending again upon the extent to which Memphis facilities are completed, addition of the 2 Johnsonville and 2 Gallatin units to the system would reduce the 1958 deficiency to less than 1 percent, or there might be a margin ranging from zero to less than 4 percent.

Little on-site work will be required during 1956. However, in order to assure delivery of the units in time to be installed ahead of the 1957 and 1958 winter peaks, some orders must now be placed with manufacturers, at least on a tentative basis. With an indicated deficiency which could amount to as much as 9.5 percent by the 1958 winter peak, it is evident that the initial steps toward the installation of capacity to alleviate the discrepancy between supply and demand cannot be delayed. The schedule for the John Sevier unit is critical; as has been indicated, this is the only unit that can be completed before the 1957 peak demand.

To secure now a place on the production schedules of the suppliers of the major equipment so that it will be possible to complete the unit on time, the Board has issued letters of intent to the manufacturers of equipment for the Sevier unit, and is considering similar action with respect to the other units. These steps will also exempt TVA from substantial price increases that the equipment manufacturers have recently announced and which would apply if the bids TVA has received for prompt acceptance were allowed to expire. These letters of intent provide for cancellation by TVA at any time prior to August 1, 1956, upon payment of the contractors' unrecoverable costs to the date of cancellation plus a reasonable profit on the work performed.

Since this budget assumes that appropriated funds for construction of the 5 additional units will not be available to TVA in 1957, the Board is proposing that the 5 units be financed from corporate funds utilizing current power revenues. When legislative action has been taken with regard to alternative means of financing it might prove advantageous to finance the costs of construction through use of revenue bond proceeds, and the situation will be reviewed at that time.

Transmission system facilities would require $24,068,000 in 1957, all to be financed from power proceeds.

Nonpower.—The 1957 budget program provides for only 1 new major water control structure—a navigation lock at Wilson Dam to replace 3 outmoded, substandard-size locks. The Board has considered the inclusion of other water control projects in the 1957 budget program but has rejected all the others at this time in order to permit concentration on this proposal. Of the funds available for Federal construction for water control purposes, in the Board's judgment a new lock at Wilson Dam merits highest priority. The Chairman of the Board has discussed this matter informally with the Chief of Engineers and with other officials of the Corps of Engineers and believes they are in accord with this view. Between 1945 and 1954 traffic through the Wilson locks rose from 452,000 tons to 2,114,000 tons. The practical annual capacity of the existing locks—2,400,000 tons—will be reached during the next year or two, probably before it will be possible to complete the proposed new facility. The existing locks are in poor structural condition, and their failure, which is a real possibility, would result in closing the river to through traffic, with serious disruption to many industries throughout the inland waterway system and to the region's transportation system. The 1957 budget program provides $7,541,000 for continuing design work and beginning construction of a new lock at Wilson Dam.

Other nonpower facilities provided for in the 1957 budget program include minor additions and improvements at completed projects, the addition of a small amount of land to Norris Reservoir for flood-control purposes, investigations for future projects, and additions and replacements of chemical and general facilities.

OPERATING EXPENSES

Power.—Sales of electric energy, exclusive of interdivisional deliveries, are expected to increase in fiscal year 1957 to about 56.6 billion kilowatt-hours. Revenues from power sales and other incidental power income items are expected to total $231,550,000, and all power operating expenses, including depreciation, are estimated at $173,226,000. The resulting estimated net income of $58,324,000 will provide a net return of about 3¾ percent on the average net investment in the power program.

Nonpower.—Income from the sale of fertilizer, and incidental income from sales of byproducts, etc., is expected to total $20,646,000 in 1957. Total cost of production and distribution, including depreciation, is estimated at $14,815,000, and provision for research, farm test demonstrations, and other cost items brings total expenses for fertilizer and munitions development to $19,090,000. Thus, there is estimated net income under this category of $1,556,000 in the 1957 budget program.

Appropriated fund requirements for all nonpower operating expenses of TVA are $6,939,000. While this is above the 1956 estimate, a considerable part of the increase is occasioned by a difference in the method of financing resource development, as explained below. The remaining increase is requested to permit TVA's programs to be carried on at an effective level, supported by adequate administrative and general services. During the past 3 years the funds made available to TVA for its appropriation-financed operating programs have been too low in many instances to permit effective performance. The budget justification describes in detail the work to be done in 1957 and its necessity.

By specific provisions in the 1955 and 1956 appropriation acts TVA was directed to finance resource-development activities in part from corporate funds. While

corporate funds will be available to finance these activities, either in whole or in part, such a situation cannot be counted upon to continue indefinitely and it is believed more appropriate to seek their financing from appropriated funds except to the limited extent that proceeds are derived through sale of products incidental to these activities. The activities are noncommercial and are in the nature of traditional Federal functions, relating to the development of agricultural resources, forests, and small watersheds. They include the preparation of maps in cooperation with the United States Geological Survey. The TVA Act does not provide for financing these general activities from corporate funds. Only through temporary legislation amending the general plan set forth in the act for the use of revenues has this diversion of proceeds been possible.

Therefore the 1957 budget program provides for financing resource-development activities from appropriated funds except for a small amount that can be financed from proceeds in accord with section 26 of the TVA Act, as amended.

The Board is also proposing the elimination of restrictive limitations in the appropriation language which it believes to be unnecessary. For example, the Bureau of the Budget has ordinarily approved as submitted our estimate for travel expenses; however, because the approved estimate has been incorporated in a legislative limitation, we have been required to engage in unproductive accounting and paperwork to assure strict compliance with the restriction. The additional work results in unnecessary expenses directly attributable to the limitation, and in some instances more significant unnecessary costs are incurred to avoid charges to the restricted category of expense. We believe such legislative limitations to be costly and unnecessary; the same end results can be more readily attained through efficient administration.

The Chairman, by separate letter, will express his views concerning the continuation of a restriction as to the construction of buildings for use as administrative offices; on the matter of the letters of intent mentioned above; and on a matter relating to the views of certain Members of the Congress with respect to financing additional generating units through the use of power proceeds.

Sincerely,

HERBERT D. VOGEL,
Chairman of the Board.

SEPTEMBER 29, 1955.

Hon. ROWLAND HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

DEAR MR. HUGHES: In the letter of transmittal accompanying our budget submission for 1957 a request was made on behalf of the TVA Board that restrictive legislation contained in previous appropriation bills be eliminated. I stated in the last paragraph of that letter that as Chairman I held a somewhat differing view on the restrictions applying to the construction of a new headquarters building for TVA, and that I would elaborate on those views in separate correspondence.

TVA is presently situated with the bulk of its personnel in three separate locations as follows:

Knoxville, Tenn.: Board of Directors, General Manager and headquarters staff, including personnel, finance, and law. The Office of Engineering and Divisions of Reservoir Properties and Agricultural Relations are also located here. Forestry is in nearby Norris.

Chattanooga, Tenn.: Office of Power, Divisions of Property and Supply, Materials, and Health and Safety.

Muscle Shoals (Florence, Sheffield, and Tuscumbia, Ala.): Division of Chemical Engineering.

This arrangement serves to balance the regional activities of TVA and provides a desirable dispersion. While some adjustments are reasonably practicable, it would be impossible to move all activities to one central location since the plant of chemical engineering at Muscle Shoals is quite large and represents a huge investment, and the Office of Power in Chattanooga is similarly anchored. Movement of any other large segment of the organization would, of course, cost a large sum of money. It may, therefore, be assumed that the arrangement whereby TVA rests on a tripod is sound and should be retained.

The main argument for moving the headquarters of TVA with its accompanying staff to Muscle Shoals is based primarily on the provision of section 8 (a) of the TVA Act of 1933 which provides that "The Corporation shall maintain its principal office in the immediate vicinity of Muscle Shoals, Ala." However, the head-

quarters has been physically located at Knoxville since its establishment, and there would appear to be no overpowering compulsion for moving it on legal grounds. Annual reports of the Board are shown as emanating from Wilson Dam, Ala.

A secondary reason for moving the headquarters is that the TVA Act provides: "Each member of the Board, in addition to his salary, shall be permitted to occupy as his residence one of the dwelling houses owned by the Government in the vicinity of Muscle Shoals * * *" There are four houses altogether, and all are in good condition. They are large frame structures overlooking Wilson Dam, and have been kept unoccupied but in good repair these many years. If the Board is not enabled to use them, they should be either rented to obtain revenue for the Government, or sold and removed.

The Board of Directors is in unanimous agreement that a headquarters building for TVA is urgently needed. Elements of the organization in Knoxville are separated in 12 different buildings, and there are 12 other buildings for field offices in and around the city. The buildings are all old, and the arrangement of space is uneconomical. The Office of Engineering is so split up and inadequately housed that it cannot operate at anything like maximum efficiency.

The Board also recognizes that an arrangement for obtaining an adequate office building on lease-purchase can be readily and quickly effected, and that competition would be keen for the privilege of erecting such a building.

In considering locations for a headquarters, diversified views have been expressed and several studies have been undertaken. The most recent of these was completed early in 1955, and the Board has it in mind to review the entire situation at an early date.

In view of the fact that the question remains unresolved, I believe it best to retain restrictions against building a new headquarters office for TVA except as approved by Congress on recommendation of the Director of the Budget.

On the subject of using power proceeds for the initiation of construction of new facilities, I am enclosing a copy of a letter to Senator McClellan which states certain facts relative thereto. The use of such funds to finance the cost of additional units to existing steam plants is opposed by an element of the Congress represented by Senators McClellan and Fulbright of Arkansas, and Holland of Florida. There are other Members of Congress, of course, who hold differing views, but the gist of the matter is that the argument has not been completely resolved and will probably be raised again. It is my opinion with respect to this situation that the best interests of TVA would be served by subordinating the use of revenues to financing by the issuance of revenue bonds. If prompt action is taken on the self-financing legislation now before the Congress the question will have only academic importance, and in any case there is likelihood of such action before an appropriation bill can be considered.

Sincerely,

HERBERT D. VOGEL,
Chairman of the Board.

Enclosure [copy letter Vogel to John L. McClellan dated September 23, 1955].

SEPTEMBER 23, 1955.

Hon. JOHN L. MCCLELLAN,
Senate Office Building,
Washington, D. C.

DEAR SENATOR MCCLELLAN: This letter is in further response to your telegram of August 30 with respect to the construction of generating units from power revenues.

The TVA Board has now had an opportunity to review the power supply situation and to consider what additional generating units are necessary in order to provide for the power needs of TVA's service area in 1957 and 1958. The sources of funds for these units will be considered with the Bureau of the Budget and the Congress in the normal budget process. Power revenues would be sufficient to complete these units, but it is our hope that legislation authorizing TVA to finance power construction by the issuance of revenue bonds will be passed by the Congress in sufficient time for revenue-bond financing to be considered in connection with the construction program for the fiscal year 1957.

Of the units which it will probably be necessary to start soon a fourth unit at the John Sevier steam plant can be completed most promptly. By securing now a place on the production schedules of the suppliers of the major equipment this unit

can be completed in time to meet the peak loads forecast for the winter of 1957–58. The Board has issued letters of intent to these manufacturers in order to make it possible to complete the unit on time. This action will also exempt TVA from substantial price increases that the equipment manufacturers have recently announced and which would apply if the bids TVA has received for prompt acceptance were allowed to expire. These letters of intent provide for cancellation by TVA at any time prior to August 1, 1956, upon payment of the contractors' unrecoverable costs to the date of cancellation plus a reasonable profit on the work performed.

The issuance of the letters of intent was approved by a divided vote. The other Directors approved the letters of intent on the basis that such action was not only good business but was necessary to carry out TVA's responsibilities and upon advice of counsel that it was authorized by law. The Chairman did not dissent on the business aspects of the transaction but voted against such letters of intent on the ground that they might be considered to constitute a commitment dependent upon a future action of Congress.

With respect to other generating units considered by the Board similar letters of intent may be issued later to equipment suppliers in order to maintain equipment-delivery schedules and to avoid announced price increases, but such letters of intent will not involve commitment of funds in the current fiscal year.

We are writing a similar letter to Senator Hill who has also written us on this subject.

Sincerely yours,

HERBERT D. VOGEL,
Chairman of the Board.

NOVEMBER 29, 1955.

Hon. ROWLAND R. HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

DEAR MR. HUGHES: Your staff has advised us of your tentative decisions on the TVA's budget program for fiscal year 1957. With respect to the manpower activities, we feel that the proposed cuts will not interfere substantially with carrying on these activities. Accordingly, we express no exception to the allowances covering these activities.

We understand it has been decided to recommend incorporating in the President's 1957 budget a provision for additions of generating capacity to the TVA system which would increase the load-carrying ability of the system to 10,005,000 kilowatts by the fall of 1958, instead of about 10,500,000 kilowatts as originally recommended by TVA. The lesser capacity would be obtained by starting 3 new generating units, John Sevier No. 4 and Johnsonville Nos. 7 and 8; TVA had recommended alternative programs which included, in addition, 2 or 3 units at the Johnsonville and Gallatin plants. We are not appealing the staff determinations but urge that the way be left open to permit additions to the 1957 program as developments in the next 6 months might necessitate.

We understand that your tentative decision with respect to power capacity was based in part on the assumption that AEC will not operate in fiscal year 1958 at the "extended load" presently used at Oak Ridge and Paducah. Under these circumstances, TVA would not be expected to deliver to AEC in 1958 the 395,000 kilowatts of power which was included in our load estimates to insure continuous deliveries in excess of the contracted amounts, although within its capabilities during seasonal offpeak periods, TVA will of course do its best to meet all demands. It should be emphasized, however, that in the past AEC has operated at extended capacity on a continuous basis and a possibility still exists that it will want to continue to do so in 1958. Moreover, current inquiries for new industrial loads and the expansion of existing industrial loads indicate that our earlier estimates for these purposes were too low and that additional provision should be made for them. A further concern is the fact that, as we have advised your staff, there have been recent indications that we may expect extended outages for rebuilding by the manufacturers of some 14 of the generating units recently placed in service on our system. In view of these developments and contingencies, it may become necessary soon to expand the 1957 power construction program.

We understand that the Bureau contemplates requesting a supplemental appropriation to provide funds in 1956 for additional capacity at the John Sevier steam plant and that it contemplates the revenue bond legislation now being considered by the Congress will have been adopted in time to permit TVA to issue revenue bonds to the extent required for completion of payment for such capacity. The Board by majority action has already committed some power proceeds on the John Sevier and Johnsonville units through issuance of letters of intent, which were deemed necessary to protect tight construction schedules and to avoid substantial price increases. Power proceeds will be available in sufficient amounts to cover the cost of the 1956 work at John Sevier and to complete all three units. Use of proceeds for this purpose would make a supplemental appropriation for 1956 unnecessary.

As to expenditures for power capacity in 1957, a majority of the Board believes continued use of available revenues would be appropriate, leaving for later determination the timing of an initial issue of TVA bonds. It is agreed that there is urgent need for the financing legislation, and we shall continue to do everything which will be helpful in leading to early congressional action. Nevertheless, in planning to meet the power requirements of the region we must recognize the extended period which may be required for congressional deliberation, assuming that Congress shares our joint view as to the need of revenue bond financing, as well as the time which will be required after the legislation becomes effective to work out the numerous complicated arrangements which will be involved in the initial issue of revenue bonds. None of the three versions of the TVA financing proposal which have been introduced in the Congress would limit TVA's authority to use power revenues for new construction to the extent such revenues may be available in excess of other financial obligations imposed under the respective versions. Considerations of prudent fiscal management dictate that borrowing be limited to the financial requirements which cannot be provided from system earnings after meeting prior financial obligations.

The text of the supplementary budgetary authorization schedules which we are submitting makes provision for the use of revenues as well as appropriations and bond proceeds in 1956 and 1957 for constructing the three units which the Bureau has approved, leaving TVA free, when and if the legislation becomes effective, to determine what means of financing is most feasible and favorable to the Government under all of the circumstances then prevailing, including the terms of the legislation then in effect.

A majority of the Board of Directors of TVA recommends reconsideration of the Bureau's tentative decision to request a supplemental appropriation for 1956 to finance John Sevier unit No. 4. Should the request for an appropriation go forward, it would still appear necessary to withhold power proceeds in sufficient amounts to perform the work. In view of the many uncertainties attendant upon the situation at this time, including those of the financing bills before Congress, a majority of the Board of Directors feels that it should not estimate a payment to the Treasury in greater amount than it can forecast with reasonable assurance. That amount is presently believed to be $40 million. There is still more than a year before the date when, under the TVA Act, a decision is required to be made by the TVA Board as to the amount of the payment and we will endeavor to make as large a payment as may be compatible with good business principles and prudent management.

As Chairman, I feel it necessary to point out certain implications in the preceding paragraphs which may be misleading. Although it may be impossible to supply power to AEC in the "extended load" range during peak periods, we may be able to supply a large part of that which is desired during seasonal offpeak periods. Also, should failures occur in the 14 units mentioned in an earlier paragraph, such failures will almost certainly occur, or corrections be made, in the reasonably near future and probably prior to the 1958 peak.

In spite of this I believe we are approaching a tight situation due to unprecedented load growth in the area and to the narrowness of the margin under which we will be operating. While we can probably get by with 3 additional units (1 at John Sevier and 2 at Johnsonville), I would feel much more secure with a little more leeway and the situation should therefore be watched closely.

As to the matter of payments to the Treasury a year from now, I feel it is largely academic whether Congress be told that we will surely pay $40 million at that time or that, if everything works out right, we may be able to pay double that amount. In either case, as has been indicated, we will do our best to make

the payment as large as possible. The important thing is that Congress be accurately informed of the situation so as to be prepared to accept a change of estimate if it becomes necessary at a later date.

Sincerely yours,

HERBERT D. VOGEL,
Chairman of the Board.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., December 13, 1955.

Hon. HERBERT D. VOGEL,
Chairman, Board of Directors,
Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR GENERAL VOGEL: Your budget estimates for the fiscal year 1957 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. Consideration has also been given to the points covered in your letter of November 29. The President has approved the inclusion in the budget of the following recommendations for your agency:

(*a*) Provision will be made for meeting anticipated power loads through 1958 by the initiation of construction of John Sevier steam plant unit No. 4 in fiscal year 1956 and Johnsonville steam plant units Nos. 7 and 8 in fiscal year 1957. All work on the John Sevier unit is to be financed in 1956 by means of a supplemental appropriation in the amount of $3,500,000, to be requested early in January. Work on continuation of construction of this unit and all work on the Johnsonville units will be financed in 1957 through the issuance of revenue bonds on the assumption that the revenue bond legislation now pending before the Congress will be enacted. The issuance of revenue bonds in the amount of $68,500,000 will be shown under proposed legislation.

(*b*) Repayment to the Treasury in fiscal year 1957 of $75 million on power investment. This will still leave the TVA with a cash balance of about $53 million—approximately the same balance as the TVA would have had if the plants had been financed from the use of power proceeds, as originally requested, in place of revenue bonds.

(*c*) The approved 1957 program includes provision for new appropriations in that year of $5,357,000. The $6,500,000 appropriated in 1956 for construction of transmission connections with the Mississippi Valley Generating Co. will be proposed for rescission.

Future power needs of the TVA system will be subject to reexamination after the Congress has acted upon the revenue bond legislation.

The recommendations of the President, the estimates submitted, and any other information used in the formulation of these recommendations are to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the Committees on Appropriations prior to that time, the estimates may be discussed with members and staff of those committees. In such cases you will be advised before the estimates are released.

Sincerely yours,

ROWLAND HUGHES, *Director.*

DECEMBER 20, 1955.

Hon. ROWLAND R. HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

DEAR MR. HUGHES: This will acknowledge receipt of your letter of December 13, 1955, informing us of the President's decisions concerning the TVA 1957 budget.

With respect to the estimate of payment of power proceeds into the Treasury for fiscal year 1957, while the separate views of the members of the Board concerning the amount of the estimated payment are as stated in our letter of November 29, 1955, we understand from your letter that the President will

include an estimate of $75 million in his recommended budget. In response to that decision we have entered that amount in the budget materials as specified in your letter of December 13.

A majority of the Board is still of the opinion that considerable flexibility as to the method of financing the additional units at John Sevier and Johnsonville should be retained for reasons set out in our letter of November 29. You indicate, however, that you desire the President's budget to include the recommendation that all work on these units should be financed through the issuance of revenue bonds except for an amount of $3,500,000 to be provided by means of a supplemental appropriation in 1956 and the chairman concurs in this approach. The Bureau of the Budget has been kept informed of the efforts to maintain essential schedules for completion of the approved generating units by the issuance of letters of intent for the major items of equipment and the commitment of power proceeds thereunder. This step was considered necessary by a majority of the Board to meet tight construction schedules and also to avoid substantial price increases. We understand from discussions with representatives of the Bureau that the action of the Bureau on the TVA budget program does not affect the interim financing from power proceeds already reported and which must be undertaken before the sources of financing contemplated by the allowance letter of December 13 are actually available.

Sincerely,

HERBERT D. VOGEL,
Chairman of the Board.

TENNESSEE VALLEY AUTHORITY

Budget program for fiscal year 1956

	Submitted to Bureau of the Budget	Changes made by Bureau of the Budget	Revisions made by TVA after original budget submission	President's budget
Appropriation estimate:				
John Sevier steam plant unit 4 (180,000 kilowatts capacity)	$14,000,000	−$14,000,000		
Johnsonville steam plant units 7-10 (540,000 kilowatts capacity)	30,000,000	−30,000,000		
Gallatin steam plant unit 3 (225,000 kilowatts capacity)	15,000,000	−15,000,000		
New lock at Wilson Dam:				
Planning and design	490,000	−190,000		$300,000
Construction	6,996,000	−6,996,000		
Other navigation facilities	175,000	−69,000		106,000
General service facilities	412,000	−374,000		38,000
Navigation operations	272,000	−172,000		100,000
Flood control operations	221,000	−55,000		166,000
Multipurpose reservoir operations	2,211,000	−211,000		2,000,000
Fertilizer and munitions development	2,374,000	−224,000		2,150,000
Resource development	1,248,000	−848,000		400,000
Administrative and general expenses:				
Undistributed (contingency)		100,000		100,000
Other administrative and general expenses	1,569,000	−246,000		1,323,000
Other activities	20,867,000			20,867,000
Total appropriation request	95,835,000	−68,285,000		27,550,000
Corporate financed obligations:				
Power operations	117,997,000		[1] $2,197,000	120,194,000
Multipurpose reservoir operations	1,716,000	−141,000		1,575,000
Fertilizer and munitions development	15,136,000	132,000		15,268,000
Resource development	9,000	591,000		600,000
Power inventories	5,122,000		[1] 1,858,000	6,980,000
Administrative and general expenses	2,706,000	−43,000		2,663,000
Other activities	32,279,000			32,279,000
Total corporate financed obligations	174,965,000	539,000	4,055,000	179,559,000
Payments to U. S. Treasury:				
From power proceeds	64,000,000		−5,000,000	59,000,000
From nonpower proceeds	6,982,000			6,982,000
Total payments to U. S. Treasury	70,982,000		−5,000,000	65,982,000

[1] Revisions made by the TVA between the date of the original submission to the Bureau of the Budget and the date of printing the President's budget to reflect changes in estimates developed on the basis of 3 months' additional operating experience.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., September 15, 1954.

Hon. ROWLAND R. HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

DEAR MR. HUGHES: We submit herewith TVA's budget program for the fiscal year 1956. We believe this program is in accord with the budget policies described in your letter of July 23, 1954.

Funds required to finance the 1956 program would be derived as follows: An appropriation request of $95,835,000; funds provided by operations of $247,402,000; and a decrease in United States Treasury cash of $6,246,000. Of the $349,483,000 thus provided, $111,109,000 would be used for expenditures for acquisition of assets; $147,425,000 for operating expenses; $19,967,000 for increasing working capital; and $70,982,000 for retirement of bonds and repayments to the United States Treasury in accord with section 26 of the TVA Act. This latter amount of repayments from revenues is equivalent to about three-fourths of the appropriation request.

Net income from power operations is estimated at more than $59 million in 1956, representing a 4 percent return on the average net investment in power facilities. Repayments from power proceeds of $64 million in 1956 will bring the total repayment of power investment to $215 million. When the 1956 payment is made, TVA will be 60 percent ahead of an average payback schedule under the 40-year plan established by law.

THE APPROPRIATION FUND BUDGET

A new appropriation of $95,835,000 is proposed for fiscal year 1956. This amount, with an estimated balance of $14,259,000 to be carried forward from the current year, totals $110,094,000, which will be applied as follows: obligations for acquisition of assets, $103,374,000; operating expenses, $6,720,000. Not since fiscal year 1950 has the estimated requirement for appropriated funds been as low as the estimate for 1956.

The 1956 estimate for power generating and transmission facilities is $92,575,000. The budget program provides $25,865,000 for continuation of work on 2 hydro generating units and 6 steam generating units now under construction; $59 million for beginning the installation of 6 steam generating units at 3 existing projects; and $7,710,000 for transmission system facilities.

The new units proposed are John Sevier unit 4, Johnsonville units 7–10, and Gallatin unit 3. These units are those that can be installed and operated to supply system loads at lowest cost.

Generating facilities now under construction by TVA will add 1,199,500 kilowatts of capacity (nameplate) to the TVA system in fiscal year 1956. No additional TVA capacity is now under way. By the end of calendar year 1957 it is estimated that regional power demands will be 9,800,000 kilowatts. The assured load-carrying ability of the TVA system will then be from 9,533,000 to 10,133,000 kilowatts, depending upon the extent of completion of arrangements for delivery of 600,000 kilowatts of power over the TVA system to the Atomic Energy Commission by a private supplier. If these arrangements are not completed, a shortage will result. Even if they are completed and the full supply of power is available before the end of 1957, a margin of only about 3 percent is indicated which is small in comparison with normal utility standards.

The installation of 6 generating units at existing projects, as provided in the 1956 budget program, would improve the balance between power supply and requirements to some extent at the end of calendar year 1957, with the full capacity becoming available in 1958. A deficiency in power supply would be made improbable, but there would still be practically no margin if there is delay beyond 1957 in the delivery by the private supplier of all or a part of the 600,000 kilowatts for the AEC. If the contemplated arrangements for that supply are fully completed before the end of 1957, the margin for unforeseeable developments will then be 6.8 percent. By the end of 1958, when demands are expected to reach 10,600,000 kilowatts, this margin will be reduced to about 5 percent, an undesirably low level for efficient management of a power system. Any significant upward change in the power demands of Federal agencies above the known loads now taken into account would wipe out this small margin.

The Board has given serious consideration to the urgency requiring a start on construction during fiscal year 1956 of additional units in the steam power plants at Johnsonville, John Sevier, and Gallatin. It has reviewed the computations

and estimates involved in forecasting needs and is of the opinion that the methods are sound and the basic data correct. It has been noted that the forecasts result from assumed firm demands by AEC and other Government agencies and services, and from projections of growth and developing needs in the case of industry and residents of the area.

Such forecasts necessarily involve some elements of uncertainty. If industrial production should prove to be at a somewhat reduced level in 1957 and 1958, or if, contrary to past experience, few new power needs develop beyond those presently anticipated, a smaller margin would prove to have been adequate and the additions to Johnsonville alone might be sufficient. With reasonable forewarning, any deficiencies during the winter peak-load seasons that might result with installation of only the Johnsonville units conceivably might be met by bringing in higher cost power from other sources. It might be possible to complete the John Sevier and Gallatin additions in time for the 1958 peak demands even if they were not started in the 1956 budget program.

On the other hand, more capacity that included in the proposed budget would be highly desirable if other possible conditions should develop. The AEC might find it necessary, as at present, to operate at a higher level of load than provided for in its power contracts. Further expansion of AEC or AEDC facilities or any other new power demands in excess of present estimates, especially if required by the defense program, would make the availability of greater generating capacity of extreme importance. The penalties of any inadequacies of capacity would be magnified if the drought of the last few years continues or worsens. Delays in manufacture of turbines and boilers, experienced on all recent units, add seriously to the risks of any deferral of equipment orders.

After considering the range of possibilities, we have developed and are recommending the proposed program as being the most prudent alternative, in our judgment. The possibility of deferring any unit should be contemplated only if it is considered exceedingly important to reduce budgetary obligations even more sharply than we have assumed.

Thus it would be to take a calculated risk to defer construction of additional units at John Sevier and Gallatin until a subsequent fiscal year. All members of the Board concur in this, but two members believe that the risk of failing to provide a minimum margin is too great to incur. The chairman feels, on the other hand, that the risk is so relatively small and timely action in the future would so serve to further minimize it, that the 1956 budget could justifiably be limited to commencing construction on units 7, 8, 9, and 10 at the Johnsonville plant, deferring additions to John Sevier and Gallatin until the need has been more definitely established.

Transmission system facilities would require $7,710,000 in 1956, including $7,420,000 in direct obligations. Of this estimate, $6,500,000 is for beginning construction of facilities for receiving 600,000 kilowatts for transfer to the AEC. The remaining $920,000 will be used for beginning the construction of a transmission line for service to the Arnold Engineering Development Center.

The 1956 construction program includes only 1 new major water-control structure, a navigation lock at Wilson Dam to replace 3 outmoded, substandard-size locks. Funds have been requested before for this facility, but so far have been allowed only for design work. Tennessee River traffic is growing rapidly. Between 1945 and 1953 traffic through the Wilson locks rose from 452,000 tons to 1,580,000 tons. At the rate of traffic increase now anticipated, the practical annual capacity of Wilson lock—2,400,000 tons—will be reached by 1958. If a new lock can be built, it is expected that traffic past Wilson Dam will exceed 3,100,000 tons in 1963. If a new lock is not provided, full use of the investment in existing navigation facilities on the Tennessee River cannot be realized.

Appropriated fund requirements for operating expenses are $6,720,000. While this is above the estimate for 1955, the difference does not reflect any major increase in program activities. It is due primarily to a difference in the method of financing resource development in 1955.

In both 1954 and 1955, funds available for resource development were reduced sharply from actual expenditures of earlier years. The resource development activities of TVA have been kept under careful review during the past year. This review shows that it is in the national interest to continue these activities, and that a modest increase in the level of expenditure is necessary to conduct them effectively and to bring some of them to an orderly conclusion in the next few years. These points are brought out in greater detail in the TVA budget justification document.

By specific provisions in the 1954 and 1955 appropriation acts TVA was directed to finance resource development activities in part from corporate funds. We

believe that TVA's resource development activities should be financed from appropriated funds except to the extent that TVA derives corporate proceeds through sale of products incidental to these activities. They are noncommercial operations of an educational and demonstrational nature. While their immediate value is regional, as the TVA Act of 1933 contemplated they should be, they are also performed in the general interest of the country at large. Their benefits, both direct and indirect, extend beyond the region. They are in the nature of traditional Federal functions performed by TVA on a regional basis. They relate to the development of agricultural resources, of forests, and of small watersheds. They include the mapping of the area in cooperation with the United States Geological Survey.

Section 26 of the TVA Act, as amended, does not provide for financing these general activities from corporate funds. The use of TVA proceeds is restricted to the commercial-type programs that produce them. Only through temporary amending legislation in the appropriation acts has it been possible for TVA to use corporate funds to finance general resource development.

For these reasons we again provide in our 1956 budget program for financing resource development from appropriated funds except for a small amount that can be financed from corporate funds in accord with the provisions of the TVA Act, as amended.

The above comments with respect to financing resource development activities represent a majority Board opinion; however, the new Chairman of TVA, responsive to conference report (to accompany H. R 8583, 83d Cong., 2d sess., Rept. No. 1882), has given such careful consideration as time has allowed to the resource development activities program, and has determined that it can be financed in the future from other than appropriated funds, being mindful that as previously stated, temporary amending legislation in the appropriation act will be necessary. He recommends that nonpower proceeds be used for this purpose in 1956 but desires to reserve opinion as to disposition of the financing in future budgets.

Other operating programs financed from appropriated funds are planned at about 1955 levels and are described in detail in the budget justification.

We again recommend that the limitation on travel expenses contained in our 1955 appropriation language be eliminated. We are convinced that such limitations, however well-intentioned they may be, do not save money when applied to TVA. In the long run they may result in a waste of money by forcing us to choose more expensive ways of getting necessary work done in order to avoid expenses for travel.

THE CORPORATE FUND BUDGET

Corporate income is estimated at $247,455,000, of which $221,145,000 would be from power operations. Expenditures from corporate funds are estimated at $174,965,000, consisting of $29,240,000 for capital additions; $140,705,000 for expenses of operating programs and reimbursable services for other agencies; and $5,020,000 for inventories. Payments to the United States Treasury and retirement of bonds would total $70,982,000. The estimated payment from power proceeds of $64 million will be the largest annual payment ever made by TVA.

Very truly yours,

HERBERT D. VOGEL,
Chairman of the Board.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., December 1, 1954.

Hon. HERBERT D. VOGEL,
Chairman, Board of Directors,
Tennessee Valley Authority, Knoxville, Tenn.

MY DEAR GENERAL VOGEL: Your budget estimates for the fiscal year 1956 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. The President has approved the inclusion in the budget of the following recommendation for your agency's appropriation:

Payment to Tennessee Valley Authority fund $27, 450, 000

On the basis of the information furnished us, and after taking into account the arrangements between the Atomic Energy Commission and the Mississippi Valley Generating Co., the generation now scheduled for the TVA system will provide, during the 5-year period from 1953 to 1958, an increase of more than 80 percent in the assured capacity for loads other than those of the Atomic Energy Commis-

sion. In view of past experience this substantial increase would appear to make adequate provision for reasonable load growth. This increased capacity would be augmented by whatever power TVA can continue to purchase in the future from outside sources. Moreover, additional generating capacity at existing plants could, according to the information presented to us, be installed in a period of less than 3 years. Therefore, in the light of the overall budgetary problems confronting the administration, the 1956 budget will make no provision for starting construction of additional power generating units. In the event that conditions change during the next year warranting reconsideration of this decision, appropriate budgetary action will be taken.

The recommendation includes $400,000 for resource development activities. The budget contemplates that additional funds in the amount of $600,000 will be applied to these activities from proceeds of operations of the Tennessee Valley Authority.

Our advice on the draft legislation submitted by you with respect to charging interest on the power investment of the Tennessee Valley Authority is being made the subject of a separate letter.

Members of the Bureau of the Budget staff will communicate with your budget officer concerning the appropriation text, the narrative statement, and other details relating to the above amount. Please have your budget officer revise the details for 1956 in the schedules of obligations to agree with the approved estimates In addition, obligations or other transactions reported for 1955 should be revised, if necessary, to reflect significant changes in your financial plans. It will not be necessary to prepare new green sheets or narrative statements unless it is impracticable to make revisions on the original presentation. The revised schedules should be returned not later than December 3, 1954.

The recommendations of the President, the estimates submitted, and any other information used in the formulation of these recommendations are to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the committees on appropriations prior to that time, the estimates may be discussed with members and staff of those committees. In such cases you will be advised before the estimates are released.

Sincerely yours,

ROWLAND HUGHES, *Director.*

December 6, 1954.

Hon. ROLAND R. HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

DEAR MR. HUGHES: I transmit to you the following appeal from my colleagues on the TVA Board for restoration of a part of the funds eliminated from our 1956 budget request. My personal views are expressed at the end of the appeal letter.

We have received your letter of December 1, 1954, informing us of the Bureau's allowance in connection with TVA's budget request for 1956. Your letter provides appropriated funds of $27,450,000, a $68,385,000 reduction from our budget request of $95,835,000. We also have been advised by the Bureau of the Budget staff of the details applying to the allowance.

The program and estimates submitted to you in September 1954 represented the result of careful consideration and review of TVA requirements for 1956 in the light of the budget policies set out in your letter of July 23, 1954. We are also mindful of the overall budgetary problems facing the country, but the reduction in appropriated funds represented by the allowance letter, amounting to more than 70 percent, is so drastic and would have such serious consequences that we are compelled to appeal for reconsideration. We are confining our appeal to the minimum number of items which seem to us to be essential if TVA is to fulfill its statutory responsibilities. These are: the restoration of part of the proposed power capacity to be started in 1956; restoration of the estimate for the development of river transportation; and the restoration of part of the estimates for flood control, multipurpose reservoir operations, fertilizer and munitions development, and administrative expenses.

We request that the total allowance be increased from $27,450,000 to $58,250,000, an increase over the Bureau allowance of $30,800,000, but $37,585,000 less than our original request. The increase would provide $30 million for starting construction in 1956 of 540,000 kilowatts at the Johnsonville steam plant, and would restore $800,000 of the $1,825,000 reduction in the appropriation financed

program and administrative and general expenses. The revised allowance we are now requesting is substantially less than the $65 million in proceeds which TVA is expecting to pay into the Treasury in fiscal year 1956.

As stated in our letter to you of November 10, 1954, the TVA Board is giving immediate and serious attention to the possibilities of financing future expansion of the TVA power system by means other than appropriations. For the reasons described in our letter, the problem is of such importance and complexity that time is required if we are to arrive at an answer which will be workable and will serve the long-run interests of the valley region and of the Nation. Achieving a satisfactory solution will, of course, require the advice and participation of the representatives of the region, and particularly the 148 municipal and cooperative power distributors who have invested $400 million of their own money as partners in the regional power system. Until we are able to formulate a workable plan it is important that TVA be provided with the necessary appropriations to add generating capacity to its system for meeting the region's power needs. As we read the President's letter of November 10, 1954, to Representative W. Sterling Cole, which was released to the press, the President recognized that generating capacity should be provided to meet the power needs of the citizens of the Valley while the role of the Federal Government in financing new power capacity is being considered.

The 1956 budget as presently approved by the Bureau of the Budget provides no additional capacity to meet the estimated loads in the winter of 1958–59. As we indicated during our budget hearing in October, we feel strongly that prudent management of the power system would require starting during fiscal year 1956 the installation of additional generating capacity to provide a margin of several hundred thousand kilowatts over presently projected 1958 loads. The 1956 budget as presently approved by the Bureau of the Budget fails by about 500,000 kilowatts to provide enough capacity even to meet the estimated loads.

We appreciate that overall budget considerations may prevent reaching desirable objectives, but certainly we should not be planning our power programs so as to project a deficit. We believe the minimum program dictates starting at least the four Johnsonville units. The capacity thus provided, together with the power to be supplied for AEC from the Dixon-Yates plant, would barely meet the projected needs in 1958.

At present the power TVA is able to deliver to AEC and large industrial users of power is roughly half a million kilowatts less than they could use. At the same time TVA is importing roughly half a million kilowatts that happen to be available from other power systems. This amount of power loads the transmission interconnections, and more could not be delivered to TVA even to meet a national emergency. The imported power is of uncertain availability, with wide fluctuations from month to month and year to year. These facts show that it would be highly desirable if TVA's capacity were a million kilowatts greater today, in order to provide with reasonable assurance for the operation of the power using facilities built or under construction by the people and the Federal agencies in the area.

Even if it were possible to struggle through a power shortage in 1958, it could only be done at heavy cost—cost borne largely by the Government as the owner of the TVA system and as the user of about half of TVA's power output. Today the use of high cost marginal power sources is costing the area's major power consumers, principally AEC, approximately a million dollars a week above normal rates, besides reducing the return on the TVA investment. It is fortunate that in 1956 the relation of power supply to demand in this region will be much improved. At least part of those gains should be maintained by installing capacity in 1957 and 1958. Appropriations invested in a minimum program—the Johnsonville units—for keeping capacity approximately abreast of probable demands can be expected to yield larger dividends in avoidance of wasteful operation of high-cost plants than almost any investment the Federal Government could make.

Our request for appropriation financed program expenses and administrative expenses was $7,897,000. The indicated Bureau allowance of $6,072,000 for these items represents a reduction of $1,825,000, or 23 percent below the amount requested. The requested restoration of $800,000 of the Bureau of the Budget reduction of $1,825,000 for continuing these activities—navigation operations, flood control operations, multipurpose reservoir operations, fertilizer and munitions development, and administrative services—is in our opinion the minimum restoration required to enable TVA to conduct such activities at a level consistent with TVA's statutory responsibility and with reasonable effectiveness.

The attached statements detailed the bases for these recommendations and present our views on the comments contained in the allowance letter.

Although we are not requesting the restoration of funds for constructing a new lock at Wilson Dam, we feel we must again emphasize the need for early correction of the serious bottleneck which is fast developing at this strategic point on the river channel. For the past 2 years we have proposed the construction of a new lock at Wilson Dam to replace the existing outmoded facilities. Our budget request for 1956 again included funds for starting this construction. This would have allowed initial operation of the new lock in 1958, the year in which we estimate the traffic at the Wilson locks will reach the practical locking capacity. Actual traffic in calendar year 1954 will exceed that estimated in the September 1953 planning report by 20 percent, and it seems likely that the existing locks will become a bottleneck even sooner than we had anticipated. Although we have no firm basis for judging the relative needs of the new Wilson lock as compared with navigation improvements on other rivers, the benefit-cost ratio for the new Wilson lock is roughly twice as great as those published for lock and dam No. 8 on the Warrior River and the Greenup and New Cumberland locks and dams on the Ohio River.

In addition, we pointed out during the hearing in October that failure of the old operating mechanisms could occur which would put the locks out of service and result in serious interruptions to traffic. We have also found that extensive cracking has taken place in the river wall of lock No. 2. The necessity of providing for increased traffic, and the danger of structural and mechanical failure which increases every year, make early correction of these conditions essential. The bureau allowance permits continuing design of the new lock, and we hope that funds for construction will not be delayed beyond 1957.

The above comments and the attached statement reflect the views of a majority of the Board of Directors but depart in some instances from those of the chairman who believes that the Tennessee Valley Authority, in order to meet its full obligation to the people of the United States, must prepare, as a power producer, to stand more fully by itself, and, as an administrator of government functions, to develop on the one hand an eagerness in the people of the region to accept greater responsibilities, and on the other a greater degree of coordination with other government agencies that they may gradually assume in this region the functions traditionally carried out by them in other parts.

Taking the power question first: On the assumption that the Dixon-Yates plant will be built at West Memphis to be producing 600,000 kilowatts of electrical energy by the end of 1958, there will be an assured capacity in the TVA system of 10,143,000 kilowatts at that time. Against this is a contemplated demand load of 10,600,000 kilowatts. Thus, for about 3 months at the end of 1958 and the beginning of 1959 there may be a deficiency, if additional units are not built for the Johnsonville, John Sevier, and Gallatin plants—and if nothing else is done—of about 450,000 kilowatts.

On the other hand, if the Board of Directors of TVA and its staff will move promptly to devise a new system of self-financing—and if the Congress will act promptly to approve a request along that line—it should be possible to get the additions to existing steam plants started in time to have them producing power at the end of 1958 in amounts necessary to meet the demand.

Failing that, there would still be the possibility of starting the additions with funds appropriated in fiscal year 1957 and getting upward of 330,000 kilowatts additional on the lines by the end of 1958. Since TVA is now purchasing about that same amount from AEC and private sources, it should be able to ride over the emergency period.

All of these conjectures rest upon a number of uncertainties. On the one hand, the demand load of 10,600,000 kilowatts is an estimate that is considered generous and may not be reached, in which case the system may provide adequate power with no additions at Johnsonville, John Sevier, and Gallatin. On the other hand, there may be an unexpected demand by AEC, or the MVGC plant might not be built, in either of which case it would be necessary to take prompt steps to meet the anticipated shortage.

The Chairman admits that it would be convenient to have the additional power at the end of 1958 that can be generated by additional units at Johnsonville, and additional power from John Sevier and Gallatin would put TVA on "easy street" to the point that self-financing might not have to be considered for several years. He believes, however, that every effort should be made, beginning now, to avoid placing additional burdens on the taxpayers through appropriations, and he recommends therefore that action be deferred on appropriations for new starts at Johnsonville, John Sevier, and Gallatin as proposed by the Bureau of the Budget,

until the situation can be carefully examined at a later date when more information may be available.

As to reduction of appropriations for navigation operations from $272,000 to $31,000, the Chairman feels that this is very much in order. While TVA has according to law the responsibility for unified development of the Tennessee River and its tributaries, the development has now been largely accomplished. Insofar as navigation is concerned the Corps of Engineers is operating and maintaining both the locks and the channel. They are also keeping commercial statistics. In the opinion of the Chairman, the work done by TVA in connection with navigation can be suspended for a year without harm to anyone, or picked up by cushioning within the engineering division, and meantime it can be determined what part if any can be delegated to another agency. It is believed that TVA's legal responsibility can be properly discharged by seeing that necessary things are done—by whatever agency, and without duplication. Moreover, care should be taken to avoid doing things here that are not properly nor normally done elsewhere.

These same comments apply in general to the $55,000 reduction in flood-control appropriation. This is not necessary or essential work, and it is not duplicated in other parts of the country.

While not opposing the majority Board opinion on restoration of cuts against multipurpose reservoir operations, the Chairman does not believe that the proposed cuts would extend to vital functions. This same comment applies to cuts directed against the fertilizer and munitions program.

The remaining cuts appealed by the majority of the Board relate primarily to administrative and general expenses and here the Chairman concurs with the Bureau that reductions can be properly made. The work of the Government Relations and Economics Staff is of such esoteric nature that it could properly be done by a management division as a side line to practical investigations designed to improve the efficiency of the entire TVA organization. Such a group should act as staff advisers to the Chairman of the Board, who in turn should have his responsibilities defined by law whereby he would become the executive head of the organization to dispatch details of business in accordance with broad general policies determined by the Board. This would parallel the method by which successful businesses are conducted.

A separate letter proposing legislation along this line is being submitted.

Cuts in personnel and technical information would follow normally from the recommended cuts in activities previously discussed, and could be sustained at least through the fiscal year. By fiscal year 1957, a better determination can be made as the result of detached and unbiased management studies conducted under the Chairman of the Board.

The Chairman does not disagree with decentralization of operations in any organization. On the contrary he strongly favors decentralization as a general principle. He does feel, however, that top management cannot pass off its responsibilities to lower operating groups and rely on those groups to report upon their own efficiency of operations. Coordinated control is necessary at the top level to insure that policies are being carried out and that all operations are conducted with maximum efficiency. Moreover, every organization needs a directive head to take executive action as needed to see that Board policies are complied with. This should be the function of the Chairman as executive head. Working with the General Manager, he could then dispatch the multitudinous details now requiring combined action by the Board.

Sincerely yours,

HERBERT D. VOGEL,
Chairman of the Board.

TENNESSEE VALLEY AUTHORITY—EFFECTS OF BUREAU OF THE BUDGET ALLOWANCE LETTER, FISCAL YEAR 1956

POWER CAPACITY

Capacity increases now under way are not sufficient

The allowance letter notes that the capacity additions now scheduled for the TVA system will provide during the 5-year period from 1953 to 1958, an increase of more than 80 percent in the assured capacity for loads other than those of AEC. The letter goes on to say that in view of past experience this substantial increase would appear to make adequate provision for reasonable load growth.

We believe that it is not enough to look at the additional capacity that is being provided. It is necessary to consider what the total supply—old and new—will

be in relation to the load. However, we wish to point out that the general loads of the area—the residential commercial, and industrial loads—are estimated to increase 84 percent from 1953 to 1958 and that a review of past experience shows that the increase during the preceding 5 years was approximately 92 percent.

Plans should not be based on recurring power shortages

The 1953 capacity was far below the level required to carry the TVA loads or to operate the power system efficiently. It was necessary to import power from other systems, some of it at very high cost. It was necessary to operate the old and expensive plants on the TVA system. It was also necessary to curtail heavily the operations of industrial power consumers. All of these measures for meeting loads were expensive, both to TVA and its power customers.

It would not be prudent to plan on importing large amounts of power in 1958. Power from surrounding systems cannot be considered a substitute for additional capacity on the TVA system. The capacity on other systems is dedicated to their own loads and only such surpluses as may be available from time to time can be exported. The economical plants of other systems are needed for their own loads and any surplus is from the older high-cost plants. No power system can function effectively in dependence upon the unpredictable availability from other systems of power which, when available at all, must come from generating sources that range from marginal to obsolete. The occasional use of high-cost power, and the occasional curtailment of some loads, are steps to be taken under exceptional circumstances. Sound plans for the future cannot be based on the regular use of such devices. Sound rate structures should reflect occasional limited use of high-cost sources in emergencies but not their regular use. Some industrial power contracts can provide for limited curtailments, but very large amounts of power could not and have not been sold on the assumption of frequent unavailability of power.

Prospective deficiency in 1957

The estimated load for December 1957 is 9,800,000 kilowatts. The capacity now under construction by TVA, plus the capacity that it is hoped can be built by the Corps of Engineers on the Cumberland River and by the Aluminum Company of America on the Little Tennessee River, would provide an assured load-carrying capacity of 9,533,000 kilowatts. The indicated deficiency would be 267,000 kilowatts.

It was to eliminate this deficiency—originally estimated to be somewhat larger—and to provide at least some small margin that the Bureau of the Budget recommended the Dixon-Yates arrangements. As it develops, however, even if construction of the Dixon-Yates plant were to begin tomorrow, it would not be likely to provide any power for use in 1957.

Experience indicates that the construction of the Dixon-Yates plant would require more than 3 years, especially considering that no compensation is provided for overtime work and no penalties would be incurred for delays. The only guaranty is of 100,000 kilowatts of interim power which would not be delivered until January 1958, or later than that if the contracts do not become effective until after the end of this year.

Johnsonville addition would begin to be effective in 1957

One advantage of the four Johnsonville units as a minimum program to start during the coming session of Congress is that it is probable that one of them could be in operation before December 1957.

Delay of a year would be unduly hazardous

The allowance letter notes that additional generating capacity could be installed at existing plants in less than 3 years. This is generally true. However, if funds are not provided during the coming session of Congress, the time available for adding units will not be 3 years. The practical result will be to delay the beginning of installation of new units until July 1956. Even assuming that a deficiency appropriation might be provided early in 1956—and our experience has been that both the Bureau of the Budget and the Congress are reluctant to consider deficiency appropriations—construction could start but little earlier. Therefore, capacity not started during the coming session of Congress would need to be installed in 2½ years or less to be effective during the latter part of 1958. The equipment manufacturers are in better position to build the new units now on a fast schedule; however, there is no assurance that this condition will prevail if the start is delayed a year. The recent slackening of orders for new generators and turbines is now being reversed, and as new orders come in, delivery promises will tend to be extended.

In addition to the question of the practicability of construction of new capacity on shorter than normal schedule, there is the further consideration of the extra costs of construction if it should prove necessary to use abnormal overtime and other costly means of expediting construction.

We have reviewed our experience with all the units on which construction began during the last 4 years and which are now completed or close to completion. The average construction time for the units involved in the new steam plant starts is 37 months. The average time for adding units to existing steam plants is 32 months. All these units were being installed under rush schedules with the assistance of AEC-sponsored priority ratings.

In summary, the likelihood of any substantial change in the present prospects of heavy power deficiencies in 1958 is very remote and the risks and costs of any delay would be great.

No provision is being made to supply additional power AEC could use with existing facilities

In light of the rejection of the larger program that we requested, we do not ask that enough capacity be started now to provide a margin above the anticipated loads in 1958, but we would be remiss if we did not mention again that our load estimates do not provide for operation of the AEC projects at a level in excess of their design capacity. By operation at "extended load," those facilities will be able at any time to use some 500,000 kilowatts more power than the amounts assumed in our load forecasts. At the present time, the AEC facilities that have been completed are operating at higher than design capacity, and we have no reason for assuming that they may not do so in the future.

The Atomic Energy Commission is today using large amounts of power which can be supplied only at much higher prices than would be the case if we were able to maintain a reasonable margin of generating capacity over projected loads. The additional power generating units would be fully paid for from the savings such units would permit. Although at any given time the tightness of power supply and consequent high costs to AEC for interim and supplemental power have appeared to be due at least in part to emergency factors, as a practical matter this situation has become chronic. It is true that the present loads of AEC are greater than anyone knew 3 years ago that they would be. We have urged annually, however, that some margin of generating capacity be provided to help keep situations like the present one from developing. We consider it equally desirable to provide such margins for 1957 and 1958. Furthermore, it should be recognized that we will then face not only the possibility of loads now unforeseen, but the prospect of extended operation by AEC of power-using equipment which is now in existence.

AEC has not been prepared to contract for power in future years for its extended loads. Other power users in this area will be contracting from time to time to buy the available power. If it then develops in 1957 or 1958 that AEC wants to operate at extended load, the cost to the Government of the necessary power will be very much higher than if some margin of capacity were being provided.

APPROPRIATION FINANCED PROGRAM EXPENSES AND ADMINISTRATIVE AND GENERAL EXPENSES

Navigation operations

The TVA budget program for 1956 as presented to the Bureau included an estimate of $272,000 for navigation operations, one of the principal responsibilities delegated to the Board of Directors by the TVA Act. This estimate provided for engineering and research for the development of river transportation, the operation of public-use river terminals, and the cost of power required for lock operations. The Bureau indicated that the reduction here might be accomplished by eliminating the $241,000 estimated for work on development or river transportation. This would leave only $31,000 and would result in the virtual elimination of a statutory program.

The TVA Act provides for the unified development of the Tennessee River and the other resources of the Tennessee Valley region. Navigation operations are an essential part of the unified program. Construction of the navigable channel of the Tennessee River has been completed for present traffic but this does not conclude TVA's navigation responsibilities nor render navigation operations unnecessary. The channel and navigation facilities must be constantly improved to meet the needs of expanding commerce; markers on secondary channels and maps of the mainstream reservoirs must be maintained; capital improvements must be planned as needed; structures proposed by private industry across or along the river must be reviewed in accordance with the requirements of section

26a of the TVA Act; the day-to-day needs of navigation must receive consideration in the regulation of streamflow; and the optimum use of the navigation channel must be made possible through engineering and economic studies and analyses of those factors which affect the contribution of this waterway to the economic vitality of the region and the Nation. These functions can only be carried out effectively as part of TVA's overall operations and it is therefore necessary that TVA maintain a small staff of experts in the field of navigation.

The navigation investment in the Tennessee River of approximately $155 million was authorized by the Congress for the purpose of strengthening the national economy by providing a modern waterway connecting the Tennessee Valley with the other great regions of this country. This investment will serve the function for which it was authorized only if it is used, but it is a new resource which will be used only as the people learn of the opportunities which it provides. The small TVA staff performs an essential function in identifying these opportunities and furnishing to prospective shippers the information necessary to take advantage of them. Direct outgrowths of this work are new industries such as the grain elevators which are springing up at the Tennessee River ports and which afford new economic opportunities to the grain producers of the Midwest by providing a new and expanding market for their surplus grain.

The cost of this program is small but the benefits to the national economy are large. TVA's navigation operations must be continued if these benefits are to continue and expand.

Flood-control operations

The Bureau's indicated allowance of $166,000 for flood-control operations is $55,000 below the TVA estimate of $221,000. This reduction will have a serious effect on work on local flood-control problems.

In line with the national trend of reducing Federal expenditures for local projects which more appropriately should be financed at the State or local level, TVA is advancing a new approach in dealing with local flood-control problems. The purpose of this program is to generate greater awareness and sense of responsibility on the part of the States and local communities in solving their flood problems with their own resources. Every community which suffers from floods can take action to reduce or prevent encroachments in flood-hazard zones, thus reducing damage, and in many cases construction of protective works is within the financial capability of the communities involved. The ultimate goal is both to reduce flood damages, and to accomplish this result in such a way as to relieve the financial burden of the Federal Government for the construction of flood protective works. The method employed is to provide for local communities, as they request it, information as to flood heights which may be expected, together with a minimum of technical assistance, so that their engineers, assisted by appropriate organizations of the State, may prepare their own plans for such flood protection works as may be justified. The reduction proposed by the Bureau will retard the execution of this important and timely program.

Multipurpose reservoir operations

The budget submission for 1956 included an estimate of $3,927,000 for multipurpose reservoir operations, of which $2,211,000 was to be financed from appropriations and $1,716,000 from corporate funds. In this program individual operating activities are not financed wholly from appropriations or corporate funds; rather the allocation to the two funds corresponds with the distribution of total multipurpose reservoir operating expenses to the primary programs. Since 40 percent of the total (the portion charged to power) is financed from corporate funds, a reduction of $211,000 in the appropriation estimate, as indicated by the Bureau, could only be accomplished by a total reduction of $352,000 in the program estimate.

When the budget program was submitted in September, the TVA Board believed and it still believes that the program estimate of $3,927,000 for 1956 is the minimum estimate possible to permit TVA to fulfill its statutory obligations and responsibilities to the public in keeping with reasonable standards. For example, the estimate for maintenance of $264,000 was based on assuming a risk that no situations would develop which would require substantial maintenance activities. The frugality of this estimate is demonstrated by its relation to the investment of more than $260 million in plant to be maintained.

As shown on page 41 of the 1956 budget program, the annual costs of this program, adjusted for increases in salaries, wages, and prices of commodities and services, have declined significantly since 1947 despite the addition of three new new dams to the system. The original 1956 estimate, adjusted for increased prices,

for 19 dams and reservoirs is only 63 percent of the adjusted actual cost for 16 dams and reservoirs in 1947. The 1956 estimate without any price adjustment is $3,927,000 for 19 projects, compared to actual expenditures of $4,010,000 in 1947 for 16 projects.

The results of such a forced reduction could only be a serious loss of efficiency in management and inability to fulfill all of its statutory obligations and responsibilities to the public.

A review of the projected 1956 program shows that a reduction of $352,000 in the estimate would have at least the following adverse consequences:

1. Reduction of stream gaging work upon which the full effectiveness of the reservoirs for navigation, flood control, and power depends.
2. Curtailment of scheduled operating studies precluding potential improvements in operating methods which might otherwise be possible.
3. A reduction of plant protection services about 15 percent below the minimum limit considered desirable in security plans reviewed by the Department of Defense.
4. Retardation of the program of disposal of surplus lands by sale and elimination of activities relating to transfer of lands to State and local agencies for general public use and licensing and leasing of lands for recreation or other uses, forcing management direction contrary to stated national policy.
5. Elimination of all research and development work in the field of malaria control, including studies on resistance of malaria-carrying mosquitoes to DDT, development of more efficient larvicidal techniques and new insecticides, and improvement of vegetation control measures. This would seriously limit opportunities for a continuation of reductions in annual malaria control costs.
6. Elimination of all cooperative work with State, municipal, and industrial organizations in stream pollution control work, thus inhibiting the possibilities for cleaning up the waters in the Tennessee River and its tributaries.
7. Reductions in the frequency of scheduled technical inspections of safety and other conditions at dams and reservoir structures to determine maintenance requirements. This would increase risks of small defects developing into large maintenance problems because they might not be discovered soon enough.

Fertilizer and munitions development

The TVA request of $2,374,000 for fertilizer and munitions development apparently was reduced by $224,000, affecting research on fertilizer products and processes, basic agronomic research, and farm test-demonstrations.

The continued success of TVA's fertilizer and munitions development program depends on basic chemical research and process development. In order to provide more funds for basic agronomic research, TVA reduced its estimate for products and process research in 1956. A further reduction would mean the termination of some essential research now under way and the deferral of some new research projects.

The 1956 estimate for basic agronomic research provides for a different kind of research program than that of the past. Formerly, basic agronomic research related to high-analysis, single-nutrient fertilizers. Future research will involve the evaluation of chemical compounds as sources of more than one basic nutrient, a more complex kind of investigation. More attention is to be given to complicated problems of plant, soil, water, and plant-food relationships, which in turn involve such problem factors as water solubility, particle size, nutrient availability, and methods of application of plant foods. TVA feels that the research planned for 1956 will produce better, more uniform, and more timely research results than past results. It feels this so strongly that it has reduced the estimate for research on fertilizer products and processes below the 1955 level in order to provide more funds for agronomic research without increasing the program total significantly. Under the Bureau allowance it will be impossible to initiate this modified research program at an effective level, and questions of vital concern to the whole fertilizer program cannot have adequate and timely answers.

The Bureau allowance would substantially provide the same funds as were actually expended during 1954 and would drastically affect the program. In the case of farm test-demonstration of fertilizer, it would be misleading to consider 1954 as a base period. Farm test-demonstration involves the testing and demonstration of new and improved fertilizer on operating farms under a partial payment plan. In 1954 a severe drought curtailed fertilizer use. Farmers took much less fertilizer than had been anticipated, resulting in a net reduction in TVA expenditures for this purpose of about $165,000 below the estimate. The 1956 estimate assumes, as it must, normal weather conditions. A different fertilizer—calcium metaphosphate—has replaced fused tricalcium phosphate, the

experimental production of the latter having been concluded. This new fertilizer, because of its high concentration, costs more to produce than fused tricalcium phosphate. This increased cost is reflected in the 1956 estimate. The expenses of the State extension services for supervision of the farm test-demonstration work are partly paid for by TVA under contracts. Generally increased costs have been experienced by the institutions, and the 1956 estimate recognizes this effect on TVA payments.

For the reasons cited above, a return to the unrealistic 1954 expenditure level would have a serious effect on farm test-demonstration activities. To operate under the Bureau allowance would require a sharp reduction in the amount of fertilizer distributed. Fewer farmers could participate, in spite of a growing interest in this educational program in the new fertilizer-using areas of the Midwest, the Great Plains, and the Rocky Mountain area. Both program supervision and program evaluation would suffer.

The fertilizer development program is of national importance to farmers and the fertilizer industry. The Board urges that it be maintained at a fully effective level.

Administrative and general expenses

The 1956 estimate for administrative and general expenses was $4,431,000; the Bureau allowance is $4,142,000, a reduction of $289,000. We understand from the Bureau staff that this reduction might be accomplished by reducing our estimates for the Government relations and economics staff by $40,000, the Division of Personnel by $81,000, and the Information Office by $73,000, and by reducing other administrative expenses by an additional $95,000. This reduction will so severely restrict the level of administrative services that the quality of performance throughout the organization will be adversely affected. In the interest of overall efficiency and economy, TVA provides management services common to all projects and programs on a centralized basis. Unless these services can be supplied promptly and competently, construction schedules are disrupted and program accomplishments impaired. The reduced allowance will create serious deficiencies in professional assistance to principal management officers and in essential services to operating divisions.

The most serious results of the reduced figure will occur in staff studies and certain technical services. At the present time there is urgent need for TVA analyses of current regional conditions and trends in order to identify regional problems. Only by such staff studies can the Board of Directors be properly advised and assisted in program planning for integrated development of regional resources. TVA is now placing increased emphasis on the extension and strengthening of working relationships with State and local agencies. It is trying to stimulate more effective Federal-State-local partnerships to solve local problems. Without staff to develop working arrangements for these cooperative efforts, progress will be greatly handicapped and the benefits of work in the past few years cannot be fully realized. The Government Relations and Economics Staff conducts both the research and liaison functions; to reduce its funds by $40,000 would greatly weaken its effectiveness as a staff aid.

About $91,000 of the $248,000 estimate for the Information Office is for the operation of the technical library; $30,000 is for scheduling of foreign and other visitors; the remainder is for handling inquiries from the press and the general public, preparation of the annual report as required by law, and assistance to other TVA divisions on reporting and information matters. The reduction of $73,000 for these functions would cripple all of them. The technical library serves not only as a reference library but also provides research services to technical staff members and to central management offices; at the reduced level the research services will have to be eliminated. The services of library experts greatly increase its efficiency and reduce costs of library research. Without such help the technical staff would be greatly handicapped and information required by them in their work would need to be secured by uneconomical methods. The advantages of a trained, central service will be sacrificed to a more time-consuming and expensive method. Over 3,000 persons a year seek arrangements to visit TVA for study purposes. About half of these are foreign visitors; for the majority of them, the Department of State, the Foreign Operations Administration, and other Federal agencies request TVA to arrange schedules. Reduced funds will force TVA to reject many of these requests or give them only cursory attention. Nine people handle the remaining functions of the Information Office. This is a minimum staff to give adequate attention to communications within an organization of this size and make a reasonable response to the requests of the press and the general public for information.

The other reductions in the allowed amount for administrative and general expenses must be applied to the management services divisions. In this connection, it must be recognized that costs of providing personnel, fiscal, medical, safety, and other management services do not vary in direct proportion to the size and scope of the total program. When the program activities are expanding, increases in administrative and general expenses are less than proportionate; similarly, in a period of declining program expenditures it is not possible to make proportionate reductions in administrative and general expenses. The amount allowed will deprive the Division of Personnel of sufficient staff to provide the particular personnel services required when onsite construction work is declining and to proceed efficiently with the recruiting, investigation, and training of new employees to operate the power generating units as they are completed. Effective personnel assistance is essential if construction work is to be kept on schedule; TVA's remarkable record of economy and efficiency in construction reflects the accomplishments of the Division of Personnel, both in recruitment and personnel relations. The Division of Finance will have to make curtailments which would reduce the value of fiscal services as an essential management tool. The high cost of service-connected injuries in terms of both employee compensation and loss of productive work time demands that a reasonable level of medical and safety services be provided. Considering that well over half of TVA employees are engaged in hazardous work, arbitrary limitations on these services will clearly increase total cost and impair efficiency.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., December 1, 1954.

Hon. HERBERT D. VOGEL,
Chairman, Board of Directors, Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR GENERAL VOGEL: Your budget estimates for the fiscal year 1956 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. The President has approved the inclusion in the budget of the following recommendation for your agency's appropriation:

Payment to Tennessee Valley Authority fund, $27,450,000.

On the basis of the information furnished us, and after taking into account the arrangements between the Atomic Energy Commission and the Mississippi Valley Generating Co., the generation now scheduled for the TVA system will provide, during the 5-year period from 1953 to 1958, an increase of more than 80 percent in the assured capacity for loads other than those of the Atomic Energy Commission. In view of past experience this substantial increase would appear to make adequate provision for reasonable load growth. This increased capacity would be augmented by whatever power TVA can continue to purchase in the future from outside sources. Moreover, additional generating capacity at existing plants could, according to the information presented to us, be installed in a period of less than 3 years. Therefore, in the light of the overall budgetary problems confronting the administration, the 1956 budget will make no provision for starting construction of additional power generating units. In the event that conditions change during the next year warranting reconsideration of this decision, appropriate budgetary action will be taken.

The recommendation includes $400,000 for resource development activities. The budget contemplates that additional funds in the amount of $600,000 will be applied to these activities from proceeds of operations of the Tennessee Valley Authority.

Our advice on the draft legislation submitted by you with respect to charging interest on the power investment of the Tennessee Valley Authority is being made the subject of a separate letter.

Members of the Bureau of the Budget staff will communicate with your budget officer concerning the appropriation text, the narrative statement, and other details relating to the above amount. Please have your budget officer revise the details for 1956 in the schedules of obligations to agree with the approved estimates. In addition, obligations or other transactions reported for 1955 should be revised, if necessary, to reflect significant changes in your financial plans. It will not be necessary to prepare new green sheets or narrative statements unless it is impracticable to make revisions on the original presentation. The revised schedules should be returned not later than December 3, 1954.

The recommendations of the President, the estimates submitted, and any other information used in the formulation of these recommendations are to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the committee on appropriations prior to that time, the estimates may be discussed with members and staff of those committees. In such cases you will be advised before the estimates are released.

Sincerely yours,

(Signed) ROWLAND HUGHES, *Director.*

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., December 11, 1954.

Hon. HERBERT D. VOGEL,
Chairman, Board of Directors,
Tennessee Valley Authority, Knoxville, Tenn.

MY DEAR GENERAL VOGEL: As a result of the information presented in your letter of December 6, 1954, the budget determination previously conveyed to you in my letter of December 1, 1954, has been revised as follows:

Payment to Tennessee Valley Authority fund:	
Amount previously approved	$27,450,000
Revised amount	27,550,000

In accordance with your request, the amount of $100,000 is being provided for a management staff responsible to the Chairman but does not contemplate the legislation referred to on page 6 of your letter.

The Bureau of the Budget has given very careful consideration to the statements concerning the power generating needs made by the majority of the Board and by the Chairman in your letter of December 6, 1954. We note that the Board "is giving immediate and serious attention to the possibilities of financing further expansion of the TVA power system by means other than appropriations." We also realize as you stated in your earlier letter of November 10 that "the problem of finding alternative means of financing new steam plants in the Tennessee Valley area is very large and complex." We feel, however, that some positive action by the Board is desirable at as early a date as possible. We agree as stated in the bottom of page 4 of your letter of December 6 "if the Board of Directors and staff will move promptly to devise a system of new financing—and if the Congress will act promptly to approve a request along that line—it should be possible to get the additions to existing steam plants started in time for them to produce power at the end of 1958 in the amounts necessary to meet the demand." We therefore, suggest that immediate attention be given to this problem with the objective of working out a satisfactory system of self-financing in time for consideration of legislation at the next session of the Congress. If Congress does not act in time to allow the necessary starts to be made for your 1958 needs, we will reconsider the entire matter in the light of the then prevailing situation.

Members of the Bureau of the Budget staff will communicate with your budget officer concerning details of the revised amount approved.

Your cooperation in speedy revision of details in order to expedite printing will be appreciated.

Sincerely yours,

(Signed) ROLAND HUGHES, *Director.*

DECEMBER 15, 1954.

Hon. ROWLAND HUGHES,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

DEAR MR. HUGHES: We are submitting herewith the TVA budget document for fiscal year 1956 which has been revised in accordance with your letters of December 1 and 11, 1954. The December 11 letter denies all of the items appealed by the TVA Board, but allows an additional $100,000 at the request of the Chairman of the TVA Board to provide for a management staff responsible to him. We note your statement that this allowance is in lieu of legislation requested by the Chairman which would make him executive head of the agency with responsibility for dispatching the work of the agency.

My colleagues have asked me to point out that the item for a management staff responsible to the Chairman was not included either in the original TVA submission or in the Bureau of the Budget's December 1 allowance letter, and they therefore wish to take this occasion to state their views thereon. In their judgment a separate management staff responsibile to the Chairman would not be in the interest of TVA. They believe it would interfere with the effective functioning of the Board in the management of the corporation, and recommend that this item be deleted from the TVA budget.

In this I hold the opinion as aforestated that a management staff is necessary in a complicated organization of the size represented by TVA, in order that the efficiency of its operating procedures may be continually examined at executive level and that all functions may be thoroughly coordinated.

Sincerely yours,

HERBERT D. VOGEL,
Chairman of the Board.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D. C., December 20, 1954.

Hon. HERBERT D. VOGEL,
Chairman of the Board of Directors,
Tennessee Valley Authority, Knoxville, Tenn.

MY DEAR GENERAL VOGEL: Your letter of December 15, 1954, sets forth the views of your colleagues on the Board of Directors recommending the deletion of funds from the Tennessee Valley Authority budget for the establishment of an executive level management staff responsible to the Chairman and reiterates your view that staff assistance for the Chairman, along the lines discussed in your budget appeal letter on December 6, 1954, is both necessary and desirable.

In view of the difference of opinion within the Board, it has been decided that in place of identifying $100,000 for a management staff in the budget this amount will be shown as a one line contingency item in the schedule for administrative and general expenses. This is being done with the understanding that in the event agreement is not reached by members of the Board with respect to a management staff prior to the time the hearings are held by the Congress on the 1956 budget, you would be free to present your recommendations regarding the need for such a staff to the Appropriations Committees.

Sincerely yours,

ROWLAND HUGHES, *Director.*

TENNESSEE VALLEY AUTHORITY

Budget program for fiscal year 1955

	Submitted to Bureau of the Budget	Changes made by Bureau of the Budget	Revisions made by TVA after original budget submission	President's budget
Appropriation estimate:				
Fulton steam plant—2 units (450,000-kilowatt capacity)	$30,000,000	−$30,000,000		
John Sevier steam plant unit 4 (180,000-kilowatt capacity)	11,000,000	−11,000,000		
Johnsonville steam plant units 7–10 (540,000-kilowatt capacity)	31,000,000	−31,000,000		
Gallatin steam plant unit 3 (225,000-kilowatt capacity)	13,000,000	−13,000,000		
Transmission system facilities	13,844,000	−1,844,000		$12,000,000
New lock at Wilson Dam:				
Planning and design	378,000	−281,000		97,000
Construction	3,404,000	−3,404,000		
Additions and improvements at completed projects	1,083,000	−106,000		977,000
Investigations for future projects	156,000	−31,000		125,000
Chemical facilities	[1] 1,500,000	−50,000	[2] −$668,000	782,000
General service facilities	750,000	−327,000		423,000
Navigation operations	284,000	−12,000		272,000
Flood control operations	139,000	−15,000		124,000
Fertilizer and munitions development	[1] 2,311,000		[2] 57,000	2,368,000
Resource development	1,310,000	−710,000		600,000
Administrative and general expenses	2,115,000	−130,000		1,985,000
Other activities	122,047,000			122,047,000
Total appropriation request	234,321,000	−91,910,000	−611,000	141,800,000
Corporate financed obligations:				
Transmission system facilities	26,584,000	−1,584,000		25,000,000
Power operations	104,651,000		[3] 3,379,000	108,030,000
Fertilizer and munitions development	16,747,000	−4,000		16,743,000
Resource development	17,000	583,000		600,000
Administrative and general expenses	2,163,000	4,000		2,167,000
Other activities	13,708,000			13,708,000
Total corporate financed obligations	163,870,000	−1,001,000	3,379,000	166,248,000
Payments to U. S. Treasury:				
From power proceeds	50,000,000			50,000,000
From nonpower proceeds	5,172,000			5,172,000
Total payments to U. S. Treasury	55,172,000			55,172,000

[1] Marked preliminary in original submission to the Bureau of the Budget.
[2] Revisions made by TVA between original submission and date of hearing by the Bureau of the Budget.
[3] Revision made by TVA between date of original submission to the Bureau of the Budget and the date of printing of the President's budget in order to reflect adjustments in estimates with respect to magnitude and nature of loads, sources of energy supply, and costs of production on the basis of 3 months' additional operating experience.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., September 18, 1953.

Hon. JOSEPH M. DODGE,
Director, Bureau of the Budget,
Executive Office of the President, Washington 25, D. C.

DEAR MR. DODGE: We submit herewith TVA's budget program for the fiscal year 1955. This letter presents a summary and highlights of our proposed 1955 program. In the brief time available since the enactment of the 1954 Appropriation Act, we have made many adjustments in program as required. We have tried to reflect and project these adjustments in the 1955 proposed program. We believe the program is full in accord with the budget policies described in your letter of July 10, 1953.

The 1955 budget calls for expenditures of $534,923,000—consisting of $337,447,000 to be used for the acquisition of capital assets; $134,231,000 for operating expenses; $8,073,000 for increasing working capital; and $55,172,000 for the retirement of bonds and repayments to the United States Treasury in accord with section 26 of the TVA Act. The $534,923,000 would be derived as follows: Appropriation request of $234,321,000 to cover new obligations; funds provided by operations of $221,988,000; and a decrease in United States Treasury cash of $78,614,000. Net income from power operations is estimated at $54.3

million, representing a 4-percent return on the average net investment in power facilities as of 1955. Power repayments of $50 million in 1955 will bring the total repayment to $127.5 million or about 45 percent ahead of the 40-year schedule required by law.

THE APPROPRIATION FUND BUDGET

The new appropriation of $234,321,000 would be used as follows: Acquisition of assets, $227,720,000; and operating expenses, $6,601,000.

An estimated $218,572,000 is required for construction of power generating and transmission facilities necessary to meet the power needs of this region. Of this amount, $119,728,000 is for continuing work on the 21 steam and 3 hydro generating units under construction. The program now underway—without the important Fulton site capacity eliminated from the program last spring in the Bureau's review—will provide a system capacity at the end of 1956 of only 9,446,000 kilowatts, whereas presently estimated system demands at that time are 9,550,000 kilowatts.

The deficiency we face in 1956 cannot be averted by our 1955 program proposals but we can limit the deficiency to 1956. We have carefully reviewed the load estimates for 1956. We have also carefully considered the data and conclusions on future power requirements in this area included in the House committee's report on our 1954 appropriation and in your letter of July 9, 1953, to Senator Leverett Saltonstall (Congressional Record, July 10, 1953). We have found no basis for revising our 1956 load estimates to bring them closer to the forecasts made by others last spring.

The 1955 program, therefore, includes $85 million for beginning construction of 8 steam-generating units having a total rated capacity of 1,395,000 kilowatts. No new hydro projects are proposed for 1955 because equivalent steam capacity can be installed for a substantially smaller capital outlay. These additions would bring the total system capacity at the end of 1957 to 10,951,000 kilowatts, which is necessary to meet the presently estimated demands at that time of 10,440,000 kilowatts and to restore a minimum margin of 5.3 percent for unforeseeable developments affecting power requirements. The basis for TVA's load estimates and the reasons for a margin of generating capacity are described in our justification materials. Our estimate of power requirements assumes no new large Federal defense projects, no expansion of the national defense program, no change up or down in the size or the scheduling of construction of the atomic energy plant expansion. Upward adjustment in these categories could wipe out the margin proposed.

Included in the new starts is the beginning of two units at the Fulton site, near Memphis. Demands in southwest Tennessee, including the large load at Memphis, are being supplied from remote plants over long transmission lines, whose capacity will soon be exceeded. Substitution of additional units at other locations to avoid opening the new Fulton site would produce considerably less efficient and economical arrangements. Other units in the new program are: John Sevier unit 4, Gallatin unit 3, and Johnsonville units 7–10.

The construction program includes only one new major item for programs other than power. A year ago, funds were requested for beginning construction of a a new navigation lock at Wilson Dam to replace three outmoded and substandard-size locks. Funds were only provided, however, for continuing during the current year the design work on this project started in 1952. The TVA system of dams on the Tennessee River has created a 650-mile navigation channel from Paducah, Ky., to Knoxville, Tenn.; some $156 million has been invested to make the river navigable. Unless a new large lock is provided soon, the already congested locking at Wilson Dam will place a rigid ceiling on further development of traffic on the Tennessee River. Continued dependence on the old lock precludes realization of the full value of the public investment already made.

The requirements of $6,601,000 for operating expenses are fully described in our justification document. The 1954 appropriation act, approved July 27, 1953, reduced the funds available to TVA for resource development to about half the amount available in 1953. Because of the critical changes resulting from this action we have undertaken a complete review and restudy of this program. A statement concerning this review is included in the justification materials indicating the measures we are taking to secure an accelerated rate in the development of more State and local responsibility and financing in this field.

Our budget program reflects again our conviction that State and local governments should be encouraged to assume primary responsibility for urban and rural flood and other water control problems of a purely local character, including problems of watershed treatment and development. TVA's major role in watershed development is primarily one of research, demonstration, and technical

assistance—directed toward helping State and local organizations prepare themselves to assume these responsibilities. We recognize that progress in this direction may be slow and expenditures will be made only as fully justified by local initiative.

We have recommended appropriation language for 1955 which would eliminate the limitation on travel expenses contained in our 1954 language. While the amount of the limitation during the current year has caused no serious difficulties, a similar limitation in a restricted amount could cause very serious interruptions to essential work as well as increase the cost of our operations. We are convinced that such limitations, as applied to TVA, do not save money but, in the long run, result in a waste of money by pushing us to choose more expensive ways of getting necessary work done in order to avoid expenses for travel.

THE CORPORATE FUND BUDGET

Expenditures from corporate funds are estimated at $163,870,000, consisting of $28,167,000 for capital additions, $127,630,000 for expenses of operating programs and reimbursable services for other agencies, and $8,073,000 for inventories. Payments to the United States Treasury and retirement of bonds totaling $55,172,000 are also budgeted for 1955. Corporate income is estimated to be $221,988,000, of which $194,709,000 is from power operations.

The net income from power operations after depreciation but before interest charges on bonds is estimated at $54.3 million in 1955, compared with the 1954 estimate of $33.3 million and actual of $19.3 million in 1953. The estimates reflect a return on average net investment of about 4 percent for 1955, about the average experience over the 20 years of TVA's operations.

The estimated repayments from power proceeds for 1955 of $50 million represent the largest annual repayment yet made by TVA. Such payments already made together with payments budgeted for 1954 and 1955 will total $127,500,000. This figure will exceed by some 45 percent the payments which would have been made on the basis of repaying each year one-fortieth of the plant investment at the end of the previous year. The 1948 Appropriation Act requires that TVA's power investment be repaid within 40 years after the year in which facilities are placed in operation.

We are currently making a major review of our fertilizer and munitions development program which we expect to complete very early in October. For this reason the estimates for this program included in the overall financial statements are tentative and no justification materials are being submitted at this time The estimates affected are those for chemical facilities under appropriated funds and operating expenses of the program for both appropriated and corporate funds. This matter has been discussed with your staff by our Budget Officer.

Very truly yours,

GORDON R. CLAPP,
Chairman of the Board.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., October 14, 1953.

Hon. JOSEPH M. DODGE,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

DEAR MR. DODGE: When we submitted our 1955 budget program to you on September 18 we indicated that a major review was being made of our fertilizer and munitions development program. For this reason the estimates submitted at that time for the fertilizer and munitions program were tentative and no justification materials were included.

The few weeks' additional time has afforded us an opportunity to complete a thorough review of our 1955 capital requirements for chemical facilities. As a result, and taking into account conversations with your staff, we are revising our proposals to eliminate requesting funds in 1955 to begin construction on new experimental fertilizer production facilities. We believe our decision is justified because certain industrial and cooperative fertilizer producers are becoming interested in constructing facilities for the fertilizer processes which TVA had considered carrying into full-scale plants to realize production of improved and more economical fertilizers. TVA plans to continue, through technical advice and assistance to these producers, to help materially in securing for the farmers of the Nation the early benefits of these processes without requiring Federal capital investment. If this approach is unsuccessful in this instance, TVA may

wish to propose later the construction of experimental production facilities it has now eliminated from its budget proposals.

We are enclosing summary justification materials for the two budget categories involved in the program review. These are:

	Preliminary estimate submitted Sept. 18, 1953	Revised estimate
Acquisition of assets: Chemical facilities	$1,500,000	$832,000
Operating expenses: Fertilizer and munitions research development	2,311,000	2,368,000

The revised estimates shown in the foregoing are $611,000 below those initially submitted—chemical facilities being reduced by $668,000 offset by a small increase in the estimate for program expenses. Our examiner, Mr. Donnelly, has indicated that he would reduce our original budget request by the amount of these adjustments.

Please let us know if you wish any additional information on this matter.

Very truly yours,

GORDON R. CLAPP,
Chairman of the Board.

TENNESSEE VALLEY AUTHORITY

SCHEDULE B–3.—*Fertilizer and munitions development (for fiscal years ending June 30, 1953, 1954, and 1955)*

	1953 actual	1954 estimate	1955 estimate
Income:			
Sales of fertilizer:			
Federal agencies	$377,913	$1,233,000	$1,233,000
Cooperatives and other distributors	19,127,258	19,500,000	19,703,000
Total sales of fertilizer	19,505,171	20,733,000	20,936,000
Income from partial-payment plan	236,612	671,000	696,000
Sales of byproducts and other income	567,341	607,000	572,000
Total income	20,309,124	22,011,000	22,204,000
Expenses:			
Research on products and processes (appropriated funds)	1,383,114	1,315,000	1,315,000
Basic agronomic research (appropriated funds)	227,011	240,000	241,000
Production and distribution (corporate funds):			
Cost of products including depreciation	17,374,188	18,302,000	17,685,000
Othes expenses	452,235	494,000	558,000
Gross cost of production and distribution	17,826,423	18,796,000	18,243,000
Less products transferred:			
Transferred to farm test demonstrations below	639,507	1,075,000	1,101,000
Transferred to other TVA programs	77,030	42,000	50,000
Less depreciation included above	1,076,479	1,045,000	1,045,000
Total direct cost of production and distribution	16,033,407	16,634,000	16,047,000
Farm test demonstrations:			
Planning and supervision (appropriated funds)	380,799	421,000	407,000
Fertilizer used:			
Appropriated funds	402,895	404,000	405,000
Corporate funds	236,612	671,000	696,000
Total farm test demonstrations	1,020,306	1,496,000	1,508,000
Total direct expense:			
Appropriated funds	2,393,819	2,380,000	2,368,000
Corporate funds	16,270,019	17,305,000	16,743,000
Total	18,663,838	19,685,000	19,111,000
Distribution of administrative and general expenses (schedule B–5)	432,290	429,000	455,000
Total expenses before depreciation	19,096,128	20,114,000	19,566,000
Depreciation on chemical facilities	1,133,587	1,103,000	1,103,000
Total expenses	20,229,715	21,217,000	20,669,000
Net income from fertilizer and munitions development	79,409	794,000	1,535,000

Fertilizer and Munitions Development

Appropriated fund expense in 1955 is estimated at $2,368,000 and covers the cost of research on fertilizer products and processes, basic agronomic research, and farm test demonstrations. Corporate fund expense (the cost of manufacturing and distributing fertilizer) is estimated at $16,743,000. Income, almost entirely from the sale of fertilizer, is estimated at $22,204,000. After provision for depreciation ($1,103,000) and distributed administrative and general expenses ($455,000), total program expense is $20,669,000, and net income is $1,535,000.

RESEARCH ON FERTILIZER PRODUCTS AND PROCESSES

The 1955 estimate of $1,315,000 is the same as that for 1954. It covers both small-scale research and process development principally in phosphorus and phosphates. Work will continue on studies of the fundamental properties of calcium phosphates and on the physiochemical processes involved in the association of phosphate fertilizers with soil. Research on the recovery of byproduct fluorine from phosphate processing will continue. Major process development will be related to the recovery of uranium from high-alumina phosphate ore and to the production of new types of highly concentrated phosphate-nitrogen fertilizers. Efforts to improve the physical properties of ammonium nitrate fertilizer will continue.

BASIC AGRONOMIC RESEARCH

Basic agronomic research on the relative efficiency of TVA fertilizers and major crops and soil types is a necessary step prior to introducing a new fertilizer to farmers through test-demonstrations or sales. This research is coordinated with activities of the United States Department of Agriculture. Tests are being conducted at the 7 Valley State experiment stations and at experiment stations in 4 other States. Cost in 1955 is estimated at $241,000, about the same as the 1953 and 1954 levels.

FERTILIZER PRODUCTION AND DISTRIBUTION

Estimated direct obligations for fertilizer production and distribution are $16,047,000, about the same as actual obligations for 1953 and below the 1954 estimate. Income is estimated at $21,508,000, compared to $21,340,000 in 1954. Overall level of plant operations will be about the same in 1955 as in the last few years, although output of various products will change slightly. Production of phosphatic materials will total 206,000 tons; 167,000 tons of ammonium nitrate will be produced. In addition, some phosphorus and ammonia will be produced for other Federal agencies for defense use and some nitric acid and ammonia will be sold to Associated Cooperatives, Inc., for use in the manufacture of nitric phosphate fertilizer by a process developed by TVA. Fertilizer produced by TVA in excess of the amount required for farm test-demonstrations is sold to farmers through cooperative and industry distributors for special uses.

FARM TEST-DEMONSTRATIONS

The following tabulation shows the net appropriated fund expenses of farm test-demonstrations:

	1954	1955
Cost of fertilizer	$1,075,000	$1,101,000
Less farmer payments for fertilizer (corporate funds)	−671,000	−696,000
Net cost of fertilizer	404,000	405,000
Contractual payments	257,000	253,000
Other costs	164,000	154,000
Net expense (appropriated funds)	825,000	812,000

An estimated 2,656 farms in 21 States will participate in 1955 compared to 2,838 in 1954. In 1955 an estimated 12,262 tons of fused tricalcium phosphate, 5,246 tons of calcium metaphosphate, and 7,647 tons of ammonium nitrate will be used in farm test-demonstrations. In addition, TVA will purchase 800 tons of nitric phosphate fertilizer from Associated Cooperatives, Inc., and will sell it at cost to test-demonstration farmers in order to test and demonstrate this new material under procedures already established for TVA materials.

CHEMICAL FACILITIES

Summary of obligations

	1953 actual	1954 estimate	1955 estimate
Phosphate lands and rights	$93,832	$155,000	$155,000
Phosphate facilities	535,545	889,000	339,000
Nitrogen facilities	352,935	107,000	125,000
Combination fertilizer facilities	130,297		
Emergency plant replacements	317,720	354,000	400,000
General chemical facilities	−221,485	−230,000	−187,000
Total	1,208,844	1,275,000	832,000

Phosphate lands and rights

The estimate of $155,000 includes $30,000 for prospecting and purchasing phosphate lands in Tennessee and $125,000 for continuation of prospecting in Florida. A substantial part of TVA's phosphate requirements is now supplied from the Florida fields. Continued prospecting is necessary to find a reserve of high-grade rock which can be used economically at Wilson Dam, permitting better use of low-grade reserves through blending. Florida deposits already identified will be more usable if the holdings could be consolidated.

Phosphate facilities

No new facilities are proposed for fiscal year 1955. The estimate of $339,000, which is $550,000 below the estimate for 1954, includes $180,000 for facilities for abatement of atmospheric pollution as the largest single plant improvement. Fluorine is released in quantity from the nodulizing kilns and should be recovered to relieve atmospheric pollution. It is expected that the sale of fluoride compounds recovered will defray all or a part of the cost of recovery. Installation of these facilities will be completed in 1956. The estimates include $89,000 for installation of facilities for processing byproduct furnace slag as a lightweight aggregate material. It is expected that revenue from sale of the material will be greater than handling cost of all slag and that the greater ease of handling slag will result in savings equal to the cost of the facilities within 3 years. Miscellaneous minor improvements total $70,000. They include technological improvements to the calcium metaphosphate facilities and a variety of small additions and betterments.

Nitrogen facilities

TVA has been able to obtain usable surplus nitric acid equipment worth about $360,000 from other Federal agencies for the cost of dismantling and removing. The 1955 estimate includes $50,000 for continuation of this work as surplus equipment becomes available. It is planned to replace about one-third of the obsolete 1918 nitric acid units with 2 small 55-ton-per-day pressure-type units during 1955. The remaining $75,000 in the 1955 estimate covers miscellaneous minor improvements normally required to maintain efficient operation of the present plant.

Emergency Plant Replacements

An estimate of $400,000 is included for emergency plant replacement in 1955. Actual obligations in 1953 were $317,720. These requirements cannot be anticipated item by item but must be provided for in an activity of the scope of the TVA fertilizer and munitions development program.

General chemical facilities

The estimate includes $143,000 for work tools and equipment and for preliminary investigations and design studies for future projects, less a credit of $330,000 for depreciation on general chemical plant and shop facilities.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., December 18, 1953.

Hon. GORDON R. CLAPP,
Chairman, Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR MR. CLAPP: Your budget estimates for the fiscal year 1955 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. The President has approved the inclusion in the budget of the following recommendations for your agency's appropriations:

Payment to Tennessee Valley Authority fund	$141,200,000
Resource development, Tennessee Valley Authority	600,000

The recommended amount includes $119,728,000 for continuation of work on going power generating facilities in accordance with established construction schedules. In order to provide, with appropriate reserves, for reasonable growth in industrial and municipal and cooperative power loads in the area through calendar year 1957, arrangements are being made to reduce, by the fall of 1957, existing TVA commitments to the Atomic Energy Commission by a minimum of 500,000 kilowatts with the possibility that the reduction may total about 600,000 kilowatts. This portion of the AEC load for the Paducah plant would be met from additional capacity provided by sources other than TVA, thereby releasing the equivalent amount of TVA generating capacity to meet the increased load requirements of other consumers in the TVA power area. Accordingly, no provision is being made in the 1955 budget for starting additional generating units. In the event, however, that negotiations for furnishing the above-stated AEC load requirements from other sources are not consummated as contemplated, the question of starting additional generating units in the TVA area will be reconsidered.

As you were informed, it is our intention at an early date to propose the charging of interest on the Federal investment in power facilities of the Tennessee Valley Authority (including property transfers but excluding those facilities financed from corporate funds). As agreed, there will be a full discussion with you concerning the questions involved in setting up an equitable basis for charging an adequate rate of interest, and we shall be prepared to allow a reasonable period for the discussion of this and other questions which you or we may raise in connection with this proposal. In order to help us to reach a sufficiently prompt decision, the following information should be furnished to us not later than January 15, 1954:

(1) The Board's recommendations regarding the manner in which the interest rate should be calculated and the amount of the power investment to which it should be applied, together with a draft of language that would incorporate the Board's recommendations.

(2) A forecast of TVA's earning and cash positions by years for the period 1955–65 based on the Board's recommendations under (1) and on the capacity of existing power generating units and those now under construction. The statement should specifically set forth the capital repayments required under existing law, the interest payments that would be required under the Board's recommendation, and a schedule showing the new power investment by years on which the interest calculation is based.

Thereafter, discussions will be arranged between the Tennessee Valley Authority and the Bureau of the Budget for the purpose of arriving at recommendations to be presented to the President.

You are also requested to submit a draft of the language you propose for inclusion in the narrative statement in the budget indicating that the question of charging interest on power investment of the TVA is under consideration in the executive branch and that recommendations to the Congress may be made at an early date.

Members of the Bureau of the Budget staff will communicate with your budget officer concerning the appropriation text, the narrative statement, and other details relating to the above amounts. Please have your budget officer revise the details for 1955 in the schedules of obligations to agree with the approved estimates. In addition, obligations or other transactions reported for 1954 should be revised, if necessary, to reflect significant changes in your financial plans. It will not be necessary to prepare new green sheets or narrative statements unless it is impracticable to make revisions on the original presentation. The revised schedules should be returned not later than December 19, 1953.

The recommendations of the President, the estimates submitted, and any other information used in the formulation of these recommendations are to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the committees on appropriations prior to that time, the estimates may be discussed with members and staff of those committees. In such cases the agency will be advised before the estimates are released.

Sincerely yours,

(Signed) Jos. M. Dodge, *Director.*

December 24, 1953.

Hon. Joseph M. Dodge,
Director, Bureau of the Budget,
Executive Office of the President,
Washington 25, D. C.

Dear Mr. Dodge: We have received your allowance letter of December 18, 1953, fixing TVA's budget estimates for the fiscal year 1955. $141,800,000 of appropriated funds are included in the budget, of which $600,000 is earmarked for resource development. We were informed in conference with Mr. Hughes that the appropriation language for 1955, like the language for the current year, will authorize TVA to spend from revenues an additional amount for resource development activities; for 1955, $600,000, or a total of $1,200,000. Our budget officer has already submitted to the Bureau staff financial exhibits reflecting the determinations in your letter.

The allowance provides for continuation of construction on generating units already underway in accordance with TVA construction schedules, but no money is included for new starts. In lieu of the 8 steam generating units with 1,395,000 kilowatts of capacity which TVA had recommended starting in fiscal year 1955, the Atomic Energy Commission will be asked to reduce its power commitments from TVA at its Paducah facility by at least 500,000 and possibly by as much as 600,000 kilowatts. AEC would secure this amount of power from other sources and release by the fall of 1957 an equivalent amount for the increased load requirements of other consumers in the TVA power area. If these arrangements should not be consummated you have assured us that the question of starting additional generating units in the TVA area will be reconsidered and the result reflected in a supplemental appropriation request to the Congress. In addition, we were told to assume that other Federal loads served by TVA would not be increased.

This matter of power supply is so crucial to the welfare of the Tennessee Valley area and to the national interest that we feel compelled to say to you, as we did to Mr. Hughes at our conference on December 17, that the Bureau's allowance (assuming satisfactory consummation of AEC's negotiations for a substitute source for 500,000 to 600,000 kilowatts) is inadequate on the basis of TVA's load forecasts for 1957. It not only fails to provide the normal reserves which are necessary for economical operation and assurance of continuous supply but also barely meets estimated requirements, even on the assumption of favorable operating conditions and on the assumption that our obligation to AEC will not only be reduced but also that no increases in any Federal loads we serve will occur. As we told Mr. Hughes, our estimates are based on the most careful analysis and study, and we are confident they are conservative. The new system peak loads established in the last week support both our annual and long-range forecasts.

Provision of the 500,000 or 600,000 kilowatts presently planned to be secured by release of AEC load is of course essential to prevent a catastrophe in power supply in 1957. In effect, TVA would receive for its general area loads (exclusive of any new or increased Federal requirements) the output of several of the generators at Shawnee Steam Plant near Paducah now committed to AEC service. Mr. Hughes' statement that the Bureau would either carry through very promptly the proposed arrangements with AEC for release of load or submit a supplemental estimate for TVA is reassuring in view of the time required to secure consideration and approval by Congress of requests for supplemental appropriations.

The contemplated reduction of AEC's requirements from TVA will still leave TVA as the largest supplier of power for AEC, committed to supply by 1956 some 2,400,000 kilowatts out of a total firm AEC load of about 3,700,000 kilowatts at Oak Ridge and Paducah. The record will show that the AEC–TVA arrangements are very favorable to the AEC and to the Federal Treasury. This is not to say that we object to a decision that AEC shall procure from other suppliers a

greater share of its power requirements at Paducah than is covered by the existing arrangements. We do not object. Mr. Hughes pointed out, and of course we recognize, the weight of the policy considerations which led to the Bureau's decision to defer all new power units in order to avoid an initial capital investment in such facilities by the Government at this time. We understand this to be the basis for the Bureau's proposal. However, we should make clear to you that the cost of power at Paducah from the Electric Energy, Inc. plant at Joppa will be substantially more than the cost of the power which TVA has undertaken to sell AEC. An increase of as little as a half a mill per kilowatt hour in the cost of the 500,000 to 600,000 kilowatts of power which AEC will purchase in substitution for TVA power would involve excess payments of about $50 to $60 million over the life of a 25-year contract, a substantial part of the total investment required to build the necessary power facilities.

The decision of the Bureau will increase the Government's operating expenses in two other ways. The failure to provide for the Fulton plant and the other units in the budget recommended by TVA will require TVA to operate expensive marginal capacity and to buy power from time to time from the obsolescent plants of neighboring utility systems at costs several times the cost of producing power from new generating units on the TVA system. We have estimated that a one year delay in the operation of a new plant such as the proposed Fulton steam plant could result in $20 million of extra cost. This extra cost will be reflected in a lower rate of return to the Government from TVA's operations. In effect, therefore, the Government will be paying for the new units through excess power costs without owning them or having available this important and more economical increment to national productive capacity. Moreover, the capacity released by AEC at the Shawnee steam plant is not as well located with relation to other TVA loads as the proposed Fulton plant, and the utilization of this power will entail greater costs and losses in transmission which will in turn be reflected in a lower rate of return from TVA's operations through no fault of the distributors and consumers of TVA power.

We shall await word from you as to the outcome of AEC's explorations and negotiations for alternate power supply at Paducah and in the meantime will hold our plans with respect to the additional units in a state of readiness.

Your letter of December 18 states the intention of the Bureau at an early date to propose the charging of interest on the Federal investment in the power facilities of the TVA and assures TVA the opportunity for full discussion concerning the questions involved in setting up an equitable basis for charging interest. We understand from our conferences of December 17 with Mr. Hughes that the Bureau will not arrive at a final decision in this matter until after the discussions with TVA, considering among other things the amortization requirements imposed by the Government Corporations Appropriation Act, 1948, which already requires the TVA to make payment to the Federal Treasury at the average rate of 2½ percent per annum upon the Treasury investment in TVA power facilities. As you know, this amortization requirement is payable from net income, after straight-line depreciation which protects the Government's capital investment, and is therefore in the nature of a legislative minimum return on investment. We are not attempting at this time to suggest the way in which this problem should be handled but only that the solution should await the forthcoming discussions.

The factual material relating to this problem requested in your letter is now in preparation. We will do our best to have this material in your hands by January 15 as you request.

Very truly yours,

GORDON R. CLAPP,
Chairman of the Board.

MAY 7, 1956.

NOTE.—The material referred to in the last paragraph of this letter is not related to the budget program for fiscal year 1955 and, therefore, is not included among the documents relating to that budget program.

TENNESSEE VALLEY AUTHORITY

Budget program for fiscal year 1954

	Submitted to Bureau of Budget September 1952	Changes made by Bureau of Budget	Revisions made by TVA after original budget submission	President's budget January 1953	Additional changes made by Bureau of Budget	Revised estimate to Congress May 1953
Appropriation estimate:						
Boone project	$277,000	−$25,000		$252,000		$252,000
Fort Patrick Henry project	2,241,000	−25,000		2,216,000		2,216,000
Additional hydro generating units	7,007,000	−36,000		6,971,000		6,971,000
Johnsonville steam plant	455,000	−15,000		440,000	−$22,000	418,000
Widows Creek steam plant	8,660,000	−57,000		8,603,000	−2,709,000	5,894,000
Kingston steam plant (8 units)	42,663,000	−114,000		42,549,000	−9,990,000	32,559,000
Kingston unit 9 (180,000 kilowatt capacity)	9,000,000			9,000,000		9,000,000
Shawnee steam plant	37,485,000	−114,000		37,371,000	−6,588,000	30,783,000
Colbert steam plant	30,186,000	−101,000		30,085,000	−3,913,000	26,172,000
John Sevier steam plant (2 units)	21,489,000	−82,000		21,407,000	−3,322,000	18,085,000
John Sevier unit 3 (180,000 kilowatt capacity)	8,800,000			8,800,000		8,800,000
John Sevier unit 4 (180,000-kilowatt capacity)	8,200,000	−8,200,000				
Gallatin steam plant	24,856,000	−76,000		24,780,000	−1,885,000	22,895,000
New steam plant, 2 units (450,000-kilowatt capacity)	30,000,000			30,000,000	−30,000,000	
Transmission system facilities	18,164,000	−1,249,000		16,915,000	−2,571,000	14,344,000
Additions and improvements at completed projects	1,846,000	−55,000		1,791,000	−661,000	1,130,000
Wilson lock	3,769,000	−3,517,000		252,000	−126,000	126,000
Other navigation facilities	316,000			316,000	−182,000	134,000
Investigations for future projects	517,000	−230,000		287,000	−87,000	200,000
Chemical facilities	1,748,000	−106,000		1,642,000	−770,000	872,000
General facilities	1,294,000	−38,000		1,256,000	−539,000	717,000
Navigation operations	306,000	−18,000		288,000		288,000
Flood-control operations	118,000	−5,000		113,000		113,000
Multipurpose reservoir operations	2,297,000	−66,000		2,231,000		2,231,000
Fertilizer and munitions development	2,510,000	−88,000		2,422,000		2,422,000
Resource development	2,846,000	−469,000		2,377,000	−168,000	2,209,000
Administrative and general expenses	2,124,000	−129,000		1,995,000		1,995,000
Other activities	−4,000			−4,000		−4,000
Total appropriation request	269,170,000	−14,815,000		254,355,000	−63,533,000	190,822,000

Corporate financed obligations:						
Transmission system facilities	35,588,000	−182,000		35,406,000		35,406,000
Additions and improvements at completed projects	68,000	−1,000		67,000		67,000
Power operations	79,315,000	−340,000	[1] 1,412,000	80,387,000		80,387,000
Multipurpose reservoir operations	1,709,000	−44,000		1,665,000		1,665,000
Fertilizer and munitions development	15,931,000	−62,000		15,869,000		15,869,000
Reimbursable services	11,892,000	−114,000	[2] 164,000	11,942,000		11,942,000
Power inventories	3,885,000		[1] 1,053,000	4,938,000		4,938,000
Administrative and general expenses	2,452,000	−35,000		2,417,000		2,417,000
Other activities	377,000			377,000		377,000
Total corporate financed obligations	151,217,000	−778,000	2,629,000	153,068,000		153,068,000
Payments to U. S. Treasury:						
From power to proceeds	20,000,000			20,000,000		20,000,000
From nonpower proceeds	5,288,000			5,288,000		5,288,000
Total payments to U. S. Treasury	25,288,000			25,288,000		25,288,000

[1] Revisions made by TVA between the date of the original submission to the Bureau of the Budget and the date of printing the President's budget to reflect changes in estimates developed on the basis of the 3 months' additional operating experience.

[2] Revisions made by TVA to reflect assignments for mapping received from the Army Map Service between the date of the original submission to the Bureau of the Budget and the date of printing the President's budget.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., September 18, 1952.

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

DEAR MR. LAWTON: We submit herewith TVA's budget program for fiscal year 1954, which we believe to be fully in accord with the President's policies and assumptions described in your letter of June 27, 1952. The purpose of this letter is to present a summary and highlights of our proposed 1954 program.

The 1954 budget program calls for the expenditure of $455,613,000—consisting of $310,855,000 to be used for acquisition of capital assets, $119,470,000 for operating expenses, and $25,288,000 for the retirement of bonds and repayments to the United States Treasury in accord with section 26 of the TVA Act. The $455,613,000 would be derived as follows: Appropriation request of $269,170,000 to cover new obligations, funds provided by operations of $179,215,000, and a decrease in United States Treasury cash of $7,228,000.

THE APPROPRIATED FUND BUDGET

The new appropriation request, totaling $269,170,000, would be used as follows: Acquisition of assets, $260,570,000; and operating expenses and working capital of $8,600,000.

An estimated $250,903,000, or more than 96 percent of the capital budget, is necessary for projects to generate and transmit the power requirements of the TVA system. About $95 million of this amount is for continued construction of facilities to serve the Atomic Energy Commission, for which funds to begin construction were included in the Supplemental Appropriation Act, 1953. TVA is requesting $56 million to begin construction in 1954 of 990,000 kilowatts of additional generating capacity.

In July of this year TVA began construction of 1,710,000 kilowatts of power capacity on an emergency schedule to supply additional power to AEC. In the short time since that program was developed, our staff has been unable to complete the location studies necessary to fix finally the best sites for the new capacity proposed for 1954. For this reason it has been necessary to include somewhat tentative assumptions with respect to location. These are as follows: 1 additional unit (No. 9) at Kingston steam plant, 2 units (Nos. 3 and 4) at the John Sevier plant, and 2 steam-generating units at a new station to be located in the western part of the power-service area. Before the President's budget is completed, we will, of course, reach a final decision as to sites. This additional capacity, together with the assumed capacity on the Cumberland River to be constructed by the Corps of Engineers, would bring the total system assured capacity to 10,180,000 kilowatts by the end of 1956. These installations are essential to meet demands of the TVA-power-service area, which are estimated at 9,500,000 kilowatts as of the end of 1956, and to provide a margin of capacity of about 7 percent to provide for additional load developments that may reasonably be expected in light of previous load forecasting experience.

The construction program includes only one new major item for programs other than power. A year ago funds were requested and approved for beginning design work on a new navigation lock at Wilson Dam to replace three outmoded and substandard-size locks. Current traffic through the Wilson lock of direct military significance includes military vehicles, chemical products, scrap iron, steel, petroleum products, and new vessels; water shipments are being made by AEC from Oak Ridge to Paducah; Huntsville Arsenal is receiving raw material by water; and TVA steam plants will receive greatly increasing quantities of coal. Traffic estimates indicate that by 1958 annual volume will exceed 2 million tons, which cannot be accommodated by the present locks. We are requesting funds for beginning construction in 1954 which would permit completion by 1958.

The requirements of $8,605,000 for operating expenses are fully described in our justification document. TVA is actively continuing to encourage the assumption of responsibility for development activities by States and local interests. There are several outstanding examples reflected in our current budget. The colleges are carrying a larger share of the cost of farm test demonstrations and are doing an increasingly effective job in using the test demonstrations as an integral part of their extension program. In 1946, TVA payments to the colleges for supervision of test demonstrations totaled about $545,000, while State funds amounted to $425,000; in 1953, TVA payments will be about $220,000, compared with $512,000 from the States.

It is our conviction that State and local governments should be encouraged to assume primary responsibility for urban and rural flood problems of a purely local character, including problems of watershed development. We believe that TVA should retain primary responsibility for construction of flood-control structures where they would affect the operation of TVA's system of dams and reservoirs. We further believe that TVA's major role in watershed development should be primarily research, demonstrations, and technical assistance—all directed toward helping the State and local organizations prepare themselves to assume these responsibilities. None of the valley States is organized or equipped to handle these problems. We are proposing in our flood-control and watershed programs to direct our efforts vigorously toward this objective.

During World War II, TVA built four public-use river terminals to provide an essential facility on the waterway. It was originally planned that after a developmental period the terminals would be turned over to private operators. A year ago we indicated that definite plans were underway for leasing the terminals. We are happy to report that all four terminals have recently been leased to private operators. These arrangements will permit active promotional work which was not appropriated under Federal operation.

We have recommended appropriation language for 1954 which would include no limitations on particular objects or items of expenditure. The limitation on travel expenses which the Congress imposed this year has created a most critical problem. From the beginning of the year, all travel has been severely curtailed. Unless relief from this ceiling is obtained very early in the next calendar year, however, we cannot meet the construction schedules to supply power to the AEC and other installations. With respect to the limitations on automobiles and airplanes, our recommendation for deletion is based on our conviction that this type limitation as applied to TVA does not save money but, in the long run, tends to increase our cost of operation. We will be pleased to have an opportunity to discuss this matter at our hearings.

THE CORPORATE FUND BUDGET

Expenditures from corporate funds are estimated at $147,639,000, consisting of $36,774,000 for acquisition of assets, $98,863,000 for operating expenses, and $12,002,000 for reimbursable services performed for other agencies. Retirement of bonds and repayments to the United States Treasury totaling $25,288,000 are also budgeted. Corporate income is estimated to be $178,738,000, of which $143,830,000 is from power operations.

The net income from power operations after depreciation but before interest charges on bonds is estimated at $36,912,000 in 1954, compared with the 1953 estimate of $25,653,000 and actual of $25,859,447 in 1952. The estimates reflect a return on average net power investment of about 4 percent for 1954.

In your letter of November 24, 1951, you requested that we submit a tentative schedule of repayments of power investment. We have included a statement starting on page 87 of our justification document, which is responsive to this request. We believe the material given will enable your staff to appraise the adequacy of our annual estimates of repayments and to assure itself of our ability to discharge our long-range repayment obligations.

Very truly yours,

GORDON R. CLAPP,
Chairman of the Board.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D. C., November 12, 1952.

Hon. GORDON R. CLAPP,
Chairman, Board of Directors,
Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR MR. CLAPP: Your budget estimate for the fiscal year 1954 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. The President has approved the inclusion in the budget of the following recommendation for your agency's appropriation:

Tennessee Valley Authority $244,323,000

Members of the Bureau of the Budget staff will communicate with your budget officer concerning the appropriation text, the narrative statement, and other details relating to the above amount. Please have your budget officer revise the

details for 1954 in the schedules of obligations to agree with the approved estimates. In addition, obligations or other transactions reported for 1953 should be revised, if necessary, to reflect significant changes in your financial plans. It will not be necessary to prepare new green sheets or narrative statements unless it is impracticable to make revisions on the original presentation. The revised schedules should be returned not later than November 18, 1952.

Budget recommendations do not include sums for the purpose of increasing the average salaries for permanent positions for professional, administrative, and clerical employees above the 1953 level.

The recommendation of the President is to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the committees on appropriations prior to that time, the estimates may be discussed with members and staff of those committees.

Sincerely yours,

F. J. LAWTON, *Director.*

NOVEMBER 17, 1952.

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

MY DEAR MR. LAWTON: We have received your letter of November 12, 1952, advising us of the Bureau's allowance in connection with our budget request for fiscal year 1954. At four points in our program the effects of the action proposed by the Bureau would be so serious that we are compelled to appeal for further consideration of these items. The critical points are:

1. Reduction in proposed power capacity to be begun in 1954.
2. Deferment of proposed Wilson lock.
3. Reduction in estimates for resource development.
4. Reduction in estimates for project investigations.

Mr. Oliver has arranged with Mr. Staats for a discussion of these items at 2 p. m. on Wednesday, November 19.

We request that the total allowance be increased from $244,323,000 to $267,373,000. The additional $23,050,000 would provide: $19,164,000 for beginning construction of units 3 and 4 and related transmission facilities at John Sevier steam plant as proposed in our original request; $3,437,000 for beginning construction of a new lock at Wilson Dam; an additional $132,000 for resource development; and $317,000 over the Bureau's present allowance for project investigations. We also request that one minor change be made in our appropriation language as approved.

1. New power capacity

The budget program which we submitted to the Bureau provided for beginning construction in 1954 of 990,000 kilowatts of new capacity on the TVA system and assumed that the Corps of Engineers would install 128,000 kilowatts of capacity at the Cheatham and Carthage projects on the Cumberland River. The allowance does not include funds for units 3 and 4 at John Sevier steam plant which are counted upon to provide 360,000 kilowatts. We also understand that funds have been denied the Corps of Engineers for 92,000 kilowatts of power at Carthage. These two reductions would eliminate 452,000 kilowatts from our proposed program of 1,118,000 kilowatts of new capacity for 1956—a reduction of over 40 percent.

The program as presented to the Bureau would provide a margin of about 7 percent for changes in load requirements beyond those now foreseen. The Bureau's action on the program would reduce this margin to less than 3 percent. The larger margin, prudent even under normal conditions, is of critical importance under current circumstances. At the risk of repeating a perhaps familiar statement, I should like to quote a part of our testimony before the Senate Committee on Appropriations last spring:

"In view of the long time required for the planning and construction of new power capacity, and the probability of additional load growth during the next 4 years, it is urgently important that some margin of capacity over presently foreseeable loads be provided * * * The planning and construction of power facilities require 3 to 4 years, whereas chemical and aluminum plants, arsenals, and the like can be completed in 1 to 2 years. The provision of a margin of capacity is especially important because of the strategic location of the Tennessee Valley for new and expanded defense industries and military establishments. Time lost now by failure to start new capacity cannot be regained.

"This point was emphasized in the recent electric power study by the Joint Committee on Defense Production, Congress of the United States, of which Senator Maybank was chairman, wherein it stated:

"' * * * Embarking on a policy of increasing the productive capacity of American industry during the present emergency, care must be taken to see that all necessary elements required for that increase are given due consideration and provided. Obviously one of these elements is electric power. Your committee cannot emphasize too strongly the need for realizing the long lead time required to increase the output of electric power. In the face of past and current predictions by men competent in this field that the Nation faces a power shortage, especially in the Southeast and Northwest, our policy makers both in Government and in industry must give full recognition to the lead-time factor * * *.'

* * * * * * *

" 'It must also be remembered that DEPA's estimates for power requirements are based upon present military requirements. Any increase in these requirements—which is entirely possible—will cause an increase in requirements for electric power capacity.

" 'In view of these considerations, there is more danger of underestimating than of overestimating electric power requirements—yet this Nation cannot afford to underestimate those requirements.' " [1]

The situation we are experiencing in the valley today shows the dire results of failure to provide a prudent margin. We do not now have adequate generating capacity. To make matters worse, the past 7 months have been extremely dry. As a result we are buying power at rates five times the cost of power from our newer steam plants. We are operating marginal plants at very high costs. The production of aluminum, ferroalloys, and chemicals has been seriously curtailed by reductions in power deliveries, and further cutbacks are in prospect if streamflow conditions do not improve. Excess power costs alone (without trying to evaluate loss of commercial production) are amounting to many millions of dollars the last half of this year alone. Knowing as we do that power demands in 1956 could be much greater than we can now project (even as 1952 demands are much larger than forecast in 1948), it is clear that the power capacity proposed in the allowance letter could mean similar or worse conditions in 1956. Our responsibility to the power consumers of this region and to the Nation in its defense efforts compels us to urge that the capacity at the John Sevier steam plant be reinstated and that restoration be made to the Corps of Engineers for the power installations at their Carthage project. This would require an additional $19,164,000 for TVA to cover its project costs and related transmission facilities.

2. Wilson lock

Preliminary design studies for a new lock at Wilson Dam are now under way in accord with the budget program for the current year approved by the President and the Congress. Funds were requested this fall to begin construction of the lock in 1954 to permit completion by 1958. The proposed action by the Bureau would defer the beginning of the project, making completion by 1958 impossible.

Discussions with your staff since our hearings indicate that we may have left the impression that our main concern about the lock is its use for our own coal supply. Such is not the case. We are seeking to make the waterway contribute its fullest measure toward the economic development of the region. To this end we have substantially completed the navigation system at a cost of $155 million and have assisted in many ways in traffic development. The Wilson lock is the largest single bottleneck to the full development of the potential use of the river for navigation. There are compelling reasons why we believe that the new lock should be in service by 1958. These are:

(*a*) The urgent need is for additional traffic capacity at the Wilson locks as quickly as it can be provided. Traffic is growing rapidly. For the river as a whole the 1952 traffic will be nearly 2 million tons greater than in 1951—more than a 50 percent increase. At Wilson locks the 1952 traffic will be more than 250,000 tons greater than in 1951—more than a 25 percent increase; the total this year will be more than 1.2 million tons.

On the basis of the record to date, Wilson lock traffic is expected to reach 2 million tons by 1958. This is without taking into account two new major traffic developments:

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[1] S. Rept. No. 1062, 82d Cong., 2d sess., pp. 17-18 (included as a part of exhibit A in my letter to Senator Maybank dated Mar. 22, 1952).

(1) New contracts for 1 million tons of coal for the Widows Creek steam plant will be invited during the next 90 days. It is expected that a substantial portion of this coal will move by barge through Wilson locks.

(2) Cargill, Inc., plans to begin in 1953 moving Southern Appalachian coal by barge—through Wilson locks—to the Upper Mississippi market.

The southern Tennessee fields that are providing coal for the initial units in the Widows Creek steam plant do not have sufficient developed capacity to supply the 2 million tons annually that will be required with completion of the units now being installed. The most economical alternative source for the 1 million tons of new coal appears to be the west Kentucky fields; the barge route is the cheapest way for the coal to move.

The Cargill coal movement has developed since we discussed the need for the new Wilson lock with you in October and is of course confidential at this time. We have been advised that their potential volume totals about 1 million tons annually.

The combination of normal traffic growth, TVA's own coal transportation needs, and the new Cargill development will put an impossible burden on the present Wilson locks. We are concerned neither solely nor primarily with use of the lock for our own coal supply. As a coal shipper we must use the Wilson locks to keep fuel costs as low as possible. By 1958 there will not be sufficient remaining traffic capacity at the present locks to accommodate both our needs and those of all the other shippers now using or planning to use the river. Thus, if the lock is not replaced, TVA will be in the untenable position of pushing all other traffic off the river or of being unable to use it ourselves.

(*b*) Traffic capacity of the chain of three small locks at Wilson is much smaller than the capacity of locks on other waterways, or on the Tennessee. For example: Congress a year ago authorized the Army to begin construction of a new lock at Keokuk. Lockage records show that the Keokuk lock per hour of actual operation passes nearly 3½ times as much traffic as the Wilson locks. TVA's 110- by 600-foot Pickwick lock passes 5 times as much traffic as Wilson per hour of operation; and the 60- by 360-foot Wheeler lock passes traffic at 2½ times the Wilson traffic. Pickwick is the next lock below and Wheeler the next lock above Wilson.

(*c*) Finally, the construction program must permit continuous navigation during the construction period. By and large, this can be done, although some short delays and interruptions will be unavoidable. But the cost and difficulty of handling traffic during construction will mount as the traffic grows. If the project is begun in 1954 we can keep the river open at less cost; and, even more important, the added costs of an accelerated or emergency construction schedule can be avoided.

In order to permit completion by 1958, construction must be begun in 1954. The $300,000 allowed would permit only designing and planning, and additional funds are required to enable us to start construction next year. We therefore urge that our original request of $3.7 million for the lock be restored.

3. Resource development

Our request of $2,846,000 for resource development activities was reduced by $601,000. The allowance would not permit our moving forward in the tributary watershed program in the way we described to the Bureau at the time of our hearing. Our original request included $705,000 for the watershed program, whereas the allowance would provide only about $573,000. We request an additional $132,000 to enable us to carry out the program for tributary watershed development as proposed in our budget request. This program leads to State responsibilities in small watershed areas.

It is our conviction that States and local governments should be encouraged and actively assisted in preparing themselves for this job. TVA's role in watershed development is research, demonstration, and technical assistance—all directed squarely toward this objective. It is not TVA's objective to cover the valley with federally supported watershed developments. We believe that the assumption of these responsibilities by the State and local agencies in the Tennessee Valley would provide a demonstration of great significance for the Nation as a whole.

The additional $132,000 would be used for survey reports to acquaint States and local groups with the nature of their watershed problems and suggest what might be done about them. Surveys will arouse local interest, define the States' problem and set up goals. Unless that much is done there is little chance of getting the States to start remedial programs.

4. Investigations for future projects

Our request provided $504,000 for project investigations; $187,000 was allowed. We urge the amount originally requested be restored.

In planning future system additions—especially for steam generating plants—it is essential that we at all time have on hand information on a number of suitable plant sites. Only by extensive investigation and preliminary planning can such information be obtained. Alternative sites permit selection of the most economical location to serve particular load centers. In the case of steam plants, competition on coal and transportation rates save very substantial amounts. Alternative sites are essential to securing keenest competition.

The recent and previous emergency programs to supply power to AEC have largely exhausted our backlog of plant sites. Sound planning for the future development of our system requires that this situation be corrected as early as possible.

We request that the following be deleted from our proposed appropriation language for 1954: "*Provided*, That no funds appropriated for the Tennessee Valley Authority by this paragraph shall be used for the maintenance or operation of any aircraft for passenger service that is not specifically confined to the active operation of the official business of the Tennessee Valley Authority by officers or employees of such Authority." TVA has never operated nor intends to operate any airplane except for official business purposes. This provision, however, has meant that we have had to deny use of the plane to nonemployees on official TVA business and, on occasion, provide other means of transportation at higher cost to the Government. Since the provision is not saving money and frequently impedes the conduct of official business, we ask that it be removed.

For the reasons explained above, we earnestly request that our allowance be raised to the figure of $267,373,000 and that the suggested modification of our appropriation language be made. We should be very glad to provide any additional information on these matters which you may desire.

Sincerely,

GORDON R. CLAPP,
Chairman of the Board.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., November 25, 1952.

Hon. GORDON R. CLAPP,
Chairman, Board of Directors, Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR MR. CLAPP: As a result of the information presented in your letter of November 17, 1952, and of our conference on November 19, the Budget determination previously conveyed to you in my letter of November 12, 1952, has been revised as follows:

Tennessee Valley Authority:	
Amount previously approved	$244, 323, 000
Revised amount	254, 355, 000

Members of the Bureau of the Budget will communicate with your budget officer concerning details relative to the above amount. The revised schedules should be returned not later than December 1, 1952.

Sincerely yours,

(Signed) F. J. LAWTON, *Director.*

TENNESSEE VALLEY AUTHORITY

Budget program for fiscal year 1953

	Submitted to Bureau of the Budget	Changes made by Bureau of the Budget	Revisions made by TVA after original budget submission	President's budget
Regular appropriation estimate:				
Boone project	$3,780,000	−$64,000		$3,716,000
Widows Creek steam plant	22,181,000	−640,000		21,541,000
Kingston steam units 5 to 6 (360,000-kilowatt capacity)	15,000,000			15,000,000
Shawnee steam units 5 to 8 (540,000-kilowatt capacity)	28,000,000			28,000,000
Colbert steam units 3 to 4 (360,000-kilowatt capacity)	16,000,000			16,000,000
Hiwassee hydro unit 2 (59,500-kilowatt capacity)	1,614,000			1,614,000
Chatuge hydro unit 1 (10,000-kilowatt capacity)	975,000			975,000
Nottely hydro unit 1 (15,000-kilowatt capacity)	939,000			939,000
Navigation facilities	374,000	−80,000		294,000
Investigations for future projects	475,000	−151,000		324,000
Chemical facilities	1,862,000	−385,000		1,477,000
General facilities	1,570,000	−33,000		1,537,000
Navigation operations	399,000	−45,000		354,000
Multipurpose reservoir operations	2,222,000	−131,000		2,091,000
Resource development activities	2,849,000	−610,000		2,239,000
Administrative and general expenses	1,981,000	−14,000		1,967,000
Other activities	101,959,000			101,959,000
Total regular appropriation request	202,180,000	−2,153,000		200,027,000
Supplemental appropriation estimate:				
Kingston steam units 7 to 8 (360,000-kilowatt capacity)	20,000,000			20,000,000
Shawnee steam units 7 to 10 (540,000-kilowatt capacity)	51,000,000	−2,000,000		49,000,000
John Sevier steam plant, 2 units (360,000-kilowatt capacity)	23,000,000			23,000,000
Gallatin steam plant, 2 units (450,000-kilowatt capacity)	30,000,000	−1,000,000		29,000,000
Acceleration of schedules of 8 generating units included in regular program	24,000,000			24,000,000
Transmission system facilities	5,000,000			5,000,000
Total supplemental appropriation request	153,000,000	−3,000,000		150,000,000
Corporate financed obligations:				
Power operations	64,806,000		[1]−$1,481,000	63,325,000
Multipurpose reservoir operations	1,635,000	−87,000		1,548,000
Resource development activities	39,000	−13,000		26,000
Reimbursable services	7,621,000		[2] 943,000	8,564,000
Administrative and general expenses	2,105,000	14,000		2,119,000
Other activities	53,496,000			53,496,000
Total corporate financed obligations	129,702,000	−86,000	−538,000	129,078,000
Payments to U. S. Treasury:				
From power proceeds	14,000,000			14,000,000
From nonpower proceeds	5,457,000			5,457,000
Total payments to U. S. Treasury	19,457,000			19,457,000

[1] Revision made by TVA between the date of the original submission to the Bureau of the Budget and the date of printing the President's budget to reflect changes in estimates developed on the basis of 3 months' additional operating experience.

[2] Revision made by TVA to reflect assignments for mapping received from other agencies between the date of the original submission to the Bureau of the Budget and the date of printing the President's budget.

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., September 25, 1951.

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

DEAR MR. LAWTON: We submit herewith TVA's budget program for the fiscal year 1953. This letter presents a summary and highlights of the program.

The budget for 1953 has been developed in accordance with the policies and assumptions contained in Mr. Staats' letter of June 26, 1951. As shown on statement A, Sources and Application of Funds, total funds to be applied are estimated at $369,005,000—consisting of $349,548,000 to be used for acquisition of capital assets and operating expenses; and $19,457,000 for the retirement of bonds and repayments to the United States Treasury in accord with section 26 of the TVA Act. The $349,548,000 to be used in programs consists of an appropriation request of $193,134,000 to cover new obligations; $34,713,000 for the liquidation of obligations incurred under prior-year appropriations; and corporate fund obligations of $121,701,000.

THE APPROPRIATED FUND BUDGET

The new appropriation request totaling $193,134,000 would be used as follows: Acquisition of assets, $185,285,000; and operating expenses, $7,849,000.

The program of capital plant additions has been carefully reviewed and only projects essential for defense and important civilian requirements have been proposed. Of the total $185,285,000 for acquisition of assets, $178,769,000, or 97 percent, is for projects to provide power supply. Of the latter figure, $105,207,000 is for continued construction of power projects now underway; $55,513,000 is for beginning construction of 1,161,600 kilowatts of new generating capacity; and $18,049,000 is for transmission facilities. The new capacity to be started consists of additional hydro units at Hiwassee, Chatuge, and Nottely Dams; additional steam units at the Kingston and Shawnee steam plants; and additional steam capacity of two units to be located in the western part of the system. This additional capacity, together with the assumed additional capacity on the Cumberland River to be constructed by the Corps of Engineers, would bring the total system assured capacity to 7,600,000 kilowatts by the end of 1955. The installations are essential to meet the demands of the TVA power service area estimated at 7,100,000 kilowatts at the end of 1955 and to provide a margin of capacity of about 7 percent.

The construction program includes three new major items other than those related to power. Funds are requested to begin design work on a new navigation lock at Wilson Dam with the intention of requesting funds to begin construction in 1954. Two items of major importance are included in the budget category, Chemical Facilities: (1) Beginning construction of a full-scale unit for the production of nitraphosphate fertilizer (of particular importance in connection with the current national shortage of sulfur); and (2) replacement of one of the electric phosphorus furnaces at our Wilson Dam plant (necessary to maintain present level of production of elemental phosphorus).

The requirements of $7,849,000 for operating expenses are fully described in our justification document. Mr. Staats' letter of June 26 referred to the policy of transferring resource development activities to State and local interests as quickly as they can be absorbed. TVA is continuing to move in this direction: The colleges are carrying a heavier share of farm test demonstrations; the success of TVA's tributary-watershed program is dependent in a large measure on the active participation of numerous State and local agencies; TVA's developmental work in the fields of food processing, minerals—and more recently farm machinery and equipment—is being absorbed by local institutions to serve regional needs. We shall be prepared to discuss this more fully at our hearings next month.

You will recall that last year, with your concurrence, TVA proposed to the Congress the removal of the limitation on administrative and general expenses from our 1952 appropriation language. This proposal was approved. As we pointed out in our hearings, limitations on particular functions or objects of expenditure as applied to TVA do not save the Government money, but tend to increase overall costs. On 2 or 3 occasions, estimates embodied in appropriation limitations have been caught in some general-reduction scheme without an examination into the effects of these general reductions upon the activities approved and without an opportunity for TVA to explain these effects to the Congress prior to the enactment of the limitations into law. For this reason

we are proposing that the limitations on the purchase of automobiles and airplanes be removed from our 1953 language. We will be glad to provide further information to your staff on this matter.

THE CORPORATE FUND BUDGET

Expenditures from corporate funds are estimated at $121,701,000, consisting of $31,673,000 for acquisition of assets; $82,574,000 for operating expenses; and $7,454,000 for reimbursable services performed for other agencies. Retirement of bonds and repayments to the Treasury totaling $19,457,000 are also budgeted. Corporate income is estimated to be $145,898,000 of which $115,820,000 is from power operations.

The net income from power operations after depreciation but before interest charges on bonds is estimated at $30,287,000 in 1953 as compared with the 1952 estimate of $24,844,000 and actual of $26,717,102 in 1951, representing a return on average net power investment of between 3¾ percent and 4½ percent in 1952 and 1953. The return of 5.4 percent achieved in 1951 was substantially better than anticipated a year ago due to favorable streamflows and markets for supplemental power even from marginal sources.

Very truly yours,

JOHN OLIVER, *General Manager.*

KNOXVILLE, TENN., *October 29, 1951.*

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Washington, D. C.

DEAR MR. LAWTON: The budget program for 1953, which we submitted to the Bureau of the Budget in September, provided for beginning construction of 1,161,600 kilowatts of new power capacity. This program assumed that the Corps of Engineers, Department of the Army, would be able to place in operation in 1955, 233,000 kilowatts of capacity in projects on the Cumberland River. The new TVA capacity, together with the assumed additions on the Cumberland, would have increased the assured load-carrying ability of the TVA system at the end of 1955 to 7,650,000 kilowatts. Power demands on the system at the end of 1955 are expected to total 7,100,000 kilowatts. At our hearings on October 18 we described in detail the demands forecast as well as the need for the margin of some 7 percent which this program would have provided.

At our hearings we indicated that we wished to make two changes in our request as initially submitted. A decision to obtain the additional capacity requested for the western part of the system by adding units 3 and 4 to the Colbert plant permitted a reduction of $6 million in the 1953 estimate for this item. We also indicated that because of engineering difficulties, decision had been made to install 135,000-kilowatt machines at Shawnee units 5 and 6, instead of the two 180,000 units proposed in the budget document. The latter change made possible an additional reduction of $1 million but also reduced the new generating capacity requested by 90,000 kilowatts.

During the course of our hearings we were asked about the construction schedules for the Corps of Engineers projects and the likelihood of their providing the 233,000 kilowatts of capacity which we had assumed in planning our 1953 program. Although we have had frequent discussions with the corps regarding these schedules, the assumptions underlying the program which we submitted in September were necessarily tentative in view of the fact that the civil functions, Department of the Army, appropriation bill, 1952, was not enacted by the Congress until October 17. There was also pending the legislative bill (S. 97) to provide for power facilities at the Cheatham project. In the session of the Congress just concluded, no action was taken to authorize power installations at either the Cheatham project or the lower Cumberland project.

On October 27 we reviewed proposed schedules for the Cumberland projects with representatives of the corps in light of congressional action on their 1952 request. This review indicated that the Cheatham project will be delayed about 1 year; Old Hickory by 7 to 9 months; and the lower Cumberland project by 14 to 17 months. These delays will mean that 116,000 kilowatts of capacity (12,000 at Cheatham and 104,000 at lower Cumberland), which we had assumed to be available by the end of 1955, will not be in service until later—part in 1956 and part in 1957.

In order to provide for the 116,000 kilowatts of capacity lost through the rescheduling of these projects plus the reduction of 90,000 kilowatts in units 5 and 6 at Shawnee, we now wish to add to our 1953 request units 7 and 8 at the Shawnee plant. These units of 135,000 kilowatts each are estimated to cost a total of $40 million, of which $14 million would be required in 1953.

In view of the heavy load growth forecast for the next 4 years, we believe that it is highly important that the total capacity additions which we have proposed be approved. We will, of course, be glad to discuss this matter with you or your staff.

For the convenience of your staff, we have enclosed a summary of the changes in our budget program which are described above.

Yours very truly,

TENNESSEE VALLEY AUTHORITY,
JOHN OLIVER, *General Manager.*

Summary of changes in appropriation request for fiscal year 1953

	Appropriation request	New power capacity (kilowatts)	
		TVA	Corps of Engineers
Budget program, as submitted Sept. 25, 1951	$193,134,000	1,161,600	233,000
Changes indicated at hearings:			
Installation of 2 135,000-kilowatt units at Shawnee, rather than 180,000-kilowatt units	−1,000,000	−90,000	
Location of additional steam capacity for western part of system at Colbert units 3 and 4	−6,000,000		
Changes described in letter of Oct. 29:			
Delays in Corps of Engineers projects			−116,000
Addition of Shawnee units 7 and 8	14,000,000	270,000	
Total program, as revised	200,134,000	1,341,600	117,000

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., November 24, 1951.

Hon. GORDON R. CLAPP,
Chairman, Board of Directors,
Tennessee Valley Authority,
Knoxville, Tenn.

MY DEAR MR. CLAPP: Your budget estimate for the fiscal year 1953 and the information presented by your representatives from the Tennessee Valley Authority have been given careful analysis. The President has approved the inclusion in the budget of the following recommendation for your agency's appropriation:

Tennessee Valley Authority $185,800,000

This allowance includes $7,442,000 current expenses, of which $2,285,000 is to continue resource development activities in the Tennessee Valley Authority area at the same level as 1952.

The investment of the United States in power facilities by the Tennessee Valley Authority from appropriated funds is increasing rapidly. Accordingly, it would seem timely for you to formulate and present tentative plans and estimates of repayments to the Federal Treasury to cover the cost of approved facilities as well as those additions proposed in the 1953 budget. It is, of course, recognized that any repayment plan of this character must necessarily be flexible and subject to change from time to time because of variations in streamflow, costs of labor, fuel and materials, and power rates. It is considered that such a plan, which would be supplemented as additional facilities are added to the system, would serve as a valuable guide for future planning.

Members of the Bureau of the Budget staff will communicate with your budget officer concerning the appropriation text, the narrative statement, and other details relating to the above amounts. Please have your budget officer revise the details for 1953 in the schedules of obligations to agree with the approved estimates. In addition, obligations or other transactions reported for 1951 or 1952

should be revised, if necessary, to make the schedules as accurate as possible. It will not be necessary to prepare new green sheets or narrative statements unless it is impracticable to make revisions on the original presentation. The revised schedules should be returned not later than November 28, 1951.

The recommendations of the President are to be kept confidential until the budget message is presented to Congress, except that in those cases where the Bureau of the Budget releases estimates to the Committees on Appropriations prior to that time, the estimates may be discussed with members and staff of those committees.

Sincerely yours,

F. J. LAWTON, *Director.*

NOVEMBER 28, 1951.

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Executive Office of the President, Washington, D. C.

DEAR MR. LAWTON: We have just received the Bureau's allowance letter dated November 24, 1951, with respect to TVA's appropriation request for fiscal year 1953. The letter provides that of the total appropriation estimate, not more than $7,442,000 shall be for current expenses, of which not more than $2,285,000 shall be for resource development activities. The effects of the reduction in new power capacity and in the estimates for expense items are so serious as to compel us to appeal for their modification.

We request that the total allowance be increased from $185,800,000 to $194,800,000. The additional $9 million would provide $8,500,000 to begin construction of Shawnee unit 7 and an additional $500,000 for expenses. We would expect to use about $350,000 of the latter amount for resource development activities. The basis of our request for partial restoration of the $16,380,000 cut is set forth below.

NEW POWER CAPACITY

The budget program as originally proposed in our document of September 25, 1951, included two new units (5 and 6) at the Shawnee steam plant with a rated capacity of 180,000 kilowatts each. After the preparation of the request, however, it was concluded, and we advised the Bureau representatives at our hearing on October 18, that engineering considerations would prevent the use of units larger than 135,000 kilowatts (the rating of the four initial Shawnee units). This loss of 90,000 kilowatts, described during our discussion with your staff, reduced the margin by which assured capacity projected for the end of 1955 would exceed presently anticipated power requirements below 7 percent, a small margin even under normal circumstances. With the uncertainties for the future arising out of the present situation, this ought to be regarded as a minimum figure.

Following the budget hearing, we learned that the schedules upon which we had relied for construction of the Army engineers' Cumberland River projects were not dependable—that neither the third unit at Cheatham nor any of the units at the Lower Cumberland Dam can be completed in 1955. This further development reduced the margin of assured capacity projected for the end of 1955 to about 5 percent, which is below any defensible proportion. In our letter of October 29, 1951, we therefore proposed that units 7 and 8, totaling 270,000 kilowatts, be added at the Shawnee steam plant.

Each Shawnee unit of 135,000 kilowatts capacity represents about 1.9 percent of the presently anticipated 1955 load. One additional Shawnee unit would result in a capacity margin in 1955 of slightly less than 7 percent, assuming there is no further slipping in the Army engineers' program on the Cumberland. We understand that there is now some doubt that the Army engineers will have funds to begin construction of the Carthage project, from which we had planned to obtain full capacity before the end of 1955. Failure to proceed with that project would reduce the computed 1955 margin by 1.2 percent. It is essential that construction of the Carthage project get underway, and that at least one more generating unit (No. 7) be approved for installation at the Shawnee steamplant. Considering the very real possibility of the addition of large new defense power requirements before corresponsding new generating capacity could be intalled, this would provide only the slenderest factor of safety.

RESOURCE DEVELOPMENT ACTIVITIES

In September we presented a program for resource development activities totaling $2,664,000 for fiscal year 1953, less than one-half of 1947 expenditures. We believe the scope of these activities conforms with the policies and assumptions which we were asked to follow in planning our 1953 program, and nothing said at our hearing indicated that the Bureau's staff felt differently. The allowance letter cut the program back to the exact dollar level of the 1952 program, adjusted only for the cost of the recent pay increase. We believe that this cut must have been taken without full consideration of its effect. Unless at least half of the cut is restored, it will be impossible to conduct the vigorous program in this field so important both to the accomplishment of TVA's statutory obligations and to the support of the national defense program.

The 1952 budget for resource-development activities is in itself the result of a pyramided series of cuts. Last December, after TVA had carefully reviewed and cut back its own programs, very drastic reductions in the 1952 estimates previously approved by the Bureau were made as a part of the rollback of 1952 allowances. TVA did not protest this rollback; on the contrary, we made the best adjustments we could work out to meet the letter and spirit of the President's directive. The Congress applied a further reduction of 5 percent to the estimates, and a full share of this reduction was taken by TVA in the resource development category. This accumulation of cuts—by TVA, by the Bureau, and by the Congress—resulted in a level of resource development activities over 25 percent below that of 1951.

It might have appeared to the staff of the Bureau that a 1953 allowance based on 1952 estimates plus the cost of pay increases would permit a continuation of the program at least at the current level. This is not the case, however, because a large part of TVA's program is carried on by cooperating agencies under reimbursable arrangements, and these agencies are also faced with salary and other cost increases. Under these circumstances successive allowances based on prior year estimates would soon virtually eliminate the program. The restoration which we are requesting is partly for the purpose of meeting these increased costs and partly to overcome the most severe of the crippling effects of the 1952 cuts.

At our hearing we discussed the importance of TVA maintaining a vigorous program in the resource development field, even though the amount of money we asked for was very small in relation to the total budget. Progress is being made in the assumption by local agencies of a large share of responsibility for many of these activities. Further reductions in TVA's participation will jeopardize the very arrangements which under these responsibilities are being gradually transferred to State and local agencies. A substantial part of our work in this field has recently been directed toward tributary watersheds having major water control problems, and a modest increase in funds is essential to do an effective job. Our work in stream sanitation, which in the past has been largely analytical, has now reached the point where assistance to State and local agencies should pay off quickly in getting the streams cleaned up. Forestry activities are making a substantial contribution toward increased supply of wood and wood products for defense needs. We are getting increased numbers of requests for information about the valley resources and about industrial plant locations—most related to defense production. These are among the most compelling of the needs which would be sacrificed by a program cut below the level of effective operation.

OTHER EXPENSE ITEMS

A limit of $7,442,000 for expenses would require cutting back the "Multipurpose reservoir operations" expense category to the 1952 level. This category of expense includes the operation, maintenance, and management of TVA's multipurpose reservoirs. The amount of these expenses is directly related to the size and complexity of the water-control system on the Tennessee River and its tributaries. The workload increases as the number of projects is increased and as the system grows more complex. In 1953, the Boone Reservoir will come into operation and will entail additional reservoir expenses. The amount of the allowance will not enable us to carry out activities essential to the functioning of the major programs.

We believe that the need for additional funds in 1953 was fully described in our budget materials. One item we should like to reemphasize, however, is the estimate for maintenance of dam reservations. Under the 1952 allowance, this

work was cut by 50 percent—from $407,000 to $208,000. Ordinary prudence in preserving the Government's investment requires us to reinstate a substantially higher level of maintenance.

For reasons explained above, we earnestly request that $9 million be restored to our 1953 allowance. We recognize the need for keeping the overall budget level at a minimum. In the short time available, we have reviewed our program in light of the allowance letter and have worked out the adjustments in our budget which we feel can be made, and have asked for restoration of the minimum necessary for essential activities.

Sincerely yours,

HARRY A. CURTIS, *Director.*

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D. C., January 2, 1952.

Hon. GORDON R. CLAPP,
Chairman, Board of Directors,
Tennessee Valley Authority, Knoxville, Tenn.

DEAR MR. CLAPP: Receipt is acknowledted of Dr. Curtis' letter dated November 28, 1951, requesting changes in the proposed presentation of the 1953 budget for the Tennessee Valley Authority with respect to additional power capacity and funds for expenses of resource development activities, multipurpose reservoir operations, and navigation operations.

The request and the supporting information furnished by your representatives have been given careful consideration and the reduction of $14 million in the estimates proposed for the commencement of construction of units 7 and 8 of the Shawnee steam plant has been restored along with $227,000 of the $500,000 requested for expenses of resource development activities, multipurpose reservoir operations, and navigation operations. Accordingly, the total allowance for the Tennessee Valley Authority for 1953 has been increased from $185,800,000 indicated in my letter of November 24, 1951, to $200,027,000.

You are further advised that language will be presented to the Congress in connection with the 1953 budget prohibiting the award of any contract for construction or materials or for initiation of any project or major feature thereof where it is apparent that the total cost of the authorized improvement will be increased by more than 10 percent, over and above that which may be due to changes in construction cost levels, as compared with the last official estimate submitted to and approved by the Congress.

Sincerely yours,

F. J. LAWTON, *Director.*

MAY 26, 1952.

Hon. F. J. LAWTON,
Director, Bureau of the Budget,
Executive Office of the President,
Washington, D. C.

DEAR MR. LAWTON: The Atomic Energy Commission has requested TVA to supply a substantial block of power in connection with the proposed expansion of their facilities at Oak Ridge, Tenn., and Paducah, Ky. The amounts of power required are 950 megawatts at Oak Ridge and 705 megawatts at Paducah, making a total of 1,655 megawatts. In order to supply this load, TVA proposes to begin immediate construction of new steam-power-generating units having a combined rated capacity of 1,710 megawatts, which will allow for the related transmission losses and the necessary operating reserves. An acceleration of schedules of several projects now under way will also be necessary to meet interim power supply requirements. This program will require supplemental appropriation to be immediately available in the amount of $153 million.

In view of the magnitude of this program, it is essential that we have as much time as possible to reach a final decision as to the location of the new units. A number of new sites for this capacity have been considered. While we have now reduced the number of alternatives to a very few, it would not be in the interest of economy to fix the sites finally at this time. We are still in process of studies and negotiations on coal supply and freight rates—the outcome of which will determine final locations. These studies will be completed within a few days.

The program tentatively selected is as follows.

Location	*Rated capacity megawatts*
Additional units at Shawnee, units 7, 8, 9, and 10	540
Additional units at Kingston, units 7 and 8	360
New plant—East Tennessee, units 1 and 2	360
New plant—Coles Bend, units 1 and 2	450
Total	1,710

As an alternative to the East Tennessee site, we are considering a site in the southwest corner of Virginia on the Clinch River. Should we be unable to work out satisfactory arrangements for the Coles Bend site we may have to put the capacity in one or more stations now under construction. Changes from the above plans can be made without altering the amount of money required in the supplemental request although minor changes in total cost estimates may be necessary.

You will recall that our regular 1953 program as recommended by the President included funds to begin construction of Shawnee units 7 and 8 listed above. Last Friday the Senate subcommittee, in reporting our 1953 bill to the full Appropriations Committee failed to restore Shawnee units 7 and 8, which had been previously denied by the House. In determining the capacity that needs to be added to the TVA system in order to meet AEC's new power demands we have proceeded on the assumption that although these units are necessary in TVA's program, Congress would not include them in our normal program for 1953; we also assume that the Congress will include units 5 and 6 also denied by the House but restored by the Senate subcommittee.

In order to meet the schedules for power deliveries as requested by AEC it will be necessary to advance the construction schedules on several units in our regular program of capacity additions by 6 to 11 months. These units are: Shawnee 5 and 6, Kingston 5 and 6, and Colbert 1–4. Funds required for this acceleration are included in the supplemental estimate. Except at Shawnee, we do not expect the advance schedules to add to the total cost of units; at Shawnee, however, the accelerated schedule will add $2 million to the cost of the completed units.

As requested by Mr. Donnelly we are enclosing two tables summarizing the supplemental estimates both on an obligation and expenditure basis. Language covering the estimate has been submitted to your staff. It is highly important that the provisions in the language related to travel and other limitations be approved in substantially the form in which we recommended.

Very truly yours,

GORDON R. CLAPP,
Chairman of the Board.

TENNESSEE VALLEY AUTHORITY

Supplemental program—1952 (tentative)

[In millions of dollars]

OBLIGATIONS

	1953	1954	1955	1956	Total
Generating facilities:					
New installations:					
Shawnee units 7, 8, 9, and 10	51	23	10	2	86
Kingston units 7 and 8	20	17.5	11	1.5	50
East Tennessee units 1 and 2	23	21	21	2	67
Coles Bend units 1 and 2	30	28	22	5	85
Subtotal	124	89.5	64	10.5	288
Acceleration of schedules:					
Shawnee units 5 and 6	12	.....	−8	−2	2
Kingston units 5 and 6	7	.....	−3	−4	.....
Colbert units 1–4	5	.....	−3	−2	.....
Subtotal	24	.....	−14	−8	2
Total generating facilities	148	89.5	50	2.5	290
Transmission facilities	5	5	5	.....	15
Total	153	94.5	55	2.5	305

EXPENDITURES

Generating facilities:					
New installations:					
Shawnee units 7, 8, 9, and 10	16	33	35	2	86
Kingston units 7 and 8	4	19	22	5	50
East Tennessee units 1 and 2	6	25	31	5	67
Coles Bend units 1 and 2	7	28	35	15	85
Subtotal	33	105	123	27	288
Acceleration of schedules:					
Shawnee units 5 and 6	9	7	−10	−4	2
Kingston units 5 and 6	5	2	−3	−4	
Colbert units 1–4	3	2	−3	−2	
Subtotal	17	11	−16	−10	2
Total generating facilities	50	116	107	17	290
Transmission facilities	3	5	7		15
Total	53	121	114	17	305

Mr. WHITTEN. The other question I would like to ask is of a general nature. You have been asked to submit answers to a long list of questions. I thought the questions were proper; I think the answers will be proper. The questions I think to ask or that anybody else thinks to ask do not always cover the full story to the point that a balanced presentation is provided. I therefore ask that you feel free, Mr. Chairman, to submit such additional information in connection with those requests made of you as will show the full picture.

CONTRACT STATUS OF LETTERS OF INTENT

Mr. EVINS. General Vogel, just to clear up a few points concerning earlier questioning. The letters of intent which have been referred to represent in reality substantially the sending out of invitations to purchase and requests for price quotations. Is that not substantially correct?

Mr. VOGEL. I think they go a little further than that. They are tentative commitments to purchase and, after a stipulated date, carry certain penalty clauses with them. They are placements of orders which, in effect, may be canceled.

Mr. EVINS. We had a statement from either you or one of your staff members that there had been no commitments other than the commitment of $1 which provides for a saving against future price increases.

Mr. WAGNER. My statement related to letters of intent concerning the 2 units at Gallatin and the 4 at Johnsonville and was to the effect that they could be canceled until July 1, 1956, for a charge of $1.

Mr. EVINS. There exists no contract to purchase generating facilities by your writing and asking manufacturers to give you a price quotation?

Mr. VOGEL. In the case of the John Sevier unit, there is a definite obligation at this point; so that, if we effected a cancellation of those letters of intent now, we would be obligated to the extent of $385,000.

Mr. WAGNER. As of April 1.

May I say further that these letters of intent, about which I spoke just a moment ago, constitute an agreement between TVA and the supplier that we will purchase and they will supply the equipment covered unless it is canceled according to the provisions included in the letter of intent.

Mr. EVINS. There appears to be some conflict in the testimony on that subject. I believe a careful review of the record would indicate that statements have been made that no commitment, other than for $1, exists.

Mr. DAVIS. I heard their answer, and that was not the answer on the letter of intent. I think the record should stand as being the authority on that.

Mr. VOGEL. I think the testimony by Mr. Wagner was specifically as to the units for Gallatin and Johnsonville. We are now talking about the John Sevier unit No. 4, for which there is at this time an obligation.

Mr. EVINS. You have therefore gone further with respect to the commitment on the John Sevier unit than on the others, in the letters of intent?

Mr. VOGEL. Because of the passage of time.

Mr. EVINS. With respect to the John Sevier letter of intent, you have progressed further with respect to that item than you have with respect to the Johnsonville letters of intent?

Mr. SWIDLER. The dates on which we were committed to expenditures were earlier in connection with John Sevier No. 4 than in connection with the other units. In connection with the other units, we have no obligation to commit funds until July 1 and, until that date they may be canceled upon the payment of a dollar.

Mr. EVINS. I am very glad to have that clarification; I am pleased to have the record correct.

There has been some information provided that these letters of intent were really nothing more than just invitations to purchase and a request for a price quotation; but, I now understand in a few instances, you have gone further and made some commitments.

CORPORATE RESERVE FUND

How much in round figures is the corporate reserve fund of TVA at this time, approximately?

Mr. VOGEL. In power proceeds at the end of 1955, $42,918,971.

Mr. EVINS. Do you have it for 1956?

Mr. VOGEL. I have an estimate for 1956 and a further estimate for 1957.

Mr. EVINS. Give it to us for 1956.

Mr. VOGEL. For 1956, $51,780,971.

For further information on the letters of intent which have been mentioned a number of times, I might refer you to document No. 330 of the 84th Congress, 2d session, House of Representatives, in which information was transmitted by the President relative to that action with respect to the unit for the John Sevier plant which was taken by a majority of the TVA Board. That is contained on page 13.

Mr. EVINS. I am somewhat familiar with that document.

Now, General Vogel, relative to the Comptroller General's letter referred to earlier, I believe you stated the Comptroller General did not rule on the legality of the question; he did not say TVA did not have authority to use its corporate funds; but he suggested it was a question which might well address itself to the appropriate legislative committees of Congress as a question of considerable importance.

Mr. VOGEL. That is the gist of it; yes, sir.

Mr. EVINS. In other words, the Comptroller General did not say TVA did not have this authority.

With respect to the units on the Cumberland River, for the records clarification and the information of my colleague, Mr. Davis and others, the power that is generated at the Corps of Engineers dams on the Cumberland River is sold under contract to the Southeast Power Administration, and the Southeast Power Administration in turn is the marketing agency for that power, although it does in reality reach the TVA system through that marketing system.

Mr. VOGEL. I made that statement yesterday.

Mr. DAVIS. Let the record show that the gentleman from Wisconsin, Mr. Davis, feels he is qualified to ask the questions he feels he wants to.

POWER PRIORITIES

Mr. EVINS. My colleague is a very able legislator and I want him to have the benefit of all the information on this subject. And in looking at the map before the committee, the TVA has jurisdiction with respect to the Tennessee River and its tributaries; the Corps of Engineers has built public works on the Cumberland River. The Southeastern Power Administration is the marketing agency for hydroelectric power produced at plants on the Cumberland River. I believe you testified yesterday, General Vogel, that in the event there was a cutback, or words to that effect, in supplying power to the various classes of customers, that industry would be the source that would be cut back first; in other words, if the demand for the Government agencies was increased and it was necessary to supply the Defense Department with increased power, industry would be cut back first?

Mr. VOGEL. Those industries having contracts with interruptible clauses would, of course, be cut back first, to the extent permitted under each contract.

Mr. EVINS. There was some reference made to the effect perhaps you would be supplying the citizens of the area first, rather than the Government. I just wanted to clarify that, whether the citizens would probably be denied power first and the Government given first priority on available power supply?

Mr. VOGEL. I do not think there would be any large denial of citizens in the sense that it may be presumed we are talking about individual consumers. It would be, as I have said before, industries that would expect such action to the extent of our rights of interruption under their contracts.

TVA POWER SYSTEM AND TAXES

Mr. EVINS. I think those apparent conflicts should be clarified.

I had intended to ask the chairman, but, since I am acting as subcommittee chairman at this time, in the chairman's absence, I want to place in the record a statement on the matter under discussion with respect to taxes and the return on the TVA investment. This to be put in at this point in the record in order that the record might carry this information in sequence and continuity.

(The information follows:)

The TVA Power System and Taxes

In fiscal year 1954 TVA paid $3,579,000 in lieu of taxes to the States and counties of its service area, and the municipal and cooperative electric systems which distribute TVA power paid $5,496,000, a total of $9,075,000.

These payments are, of course, of primary concern to the States, counties, and cities of the power service area which depend upon them together with the taxes they collect from all other sources to support the public services whose budgets make up the costs of government. The TVA region appears to consider the payments reasonable and fair. But in the general and widespread attack on TVA the size of these taxpayments has been singled out for special attention.

It is contended, for example, that the rates of private power companies are higher than TVA rates because their tax burden is heavier. The fact is, however, that many private companies pay as taxes to State and local governments a smaller share of their earnings, or of the electric bills they collect, than is paid in the TVA power-service area. Nevertheless, their rates are higher than those paid by consumers of TVA power.

TVA's properties and operations cannot be taxed directly by State or local governments. This is not unique to TVA, but is in accord with the generally applicable rule that the properties and operations of the Federal Government are not subject to taxation by the States or their subdivisions. TVA's payments in lieu of taxes are made under a formula adopted by the Congress, and made a part of the TVA Act (sec. 13), with the concurrence and approval of State and local taxing bodies. The present section 13 was adopted by the Congress in 1940 after the major transfers of utility properties from private to public ownership. Extensive consultation with State and local taxing bodies preceded the recommendations to the Congress which were adopted after committee hearings and floor debate. Experts in public fiscal policies were consulted. The result was the present formula under which a minimum of 5 percent of TVA's gross revenues, exclusive of revenues derived from sales to the Federal Government itself, is paid to State and local governments in lieu of taxes.

This is the formula under which TVA made in-lieu tax payments of $3,579,000 in fiscal year 1954.

TVA power distributors paid $5,496,000 in taxes or in-lieu payments in 1954.

The $9,075,000 contributed to State and local governments in tax or in-lieu payments in fiscal year 1954 represented 6 percent of the consolidated revenues received by the distributors and by TVA, excluding only TVA's nontaxable revenue from sales to Federal agencies.

This percentage is somewhat below the 8.6 percent reported as the average paid by all private utilities in the United States for calendar year 1953 (the latest year for which data are available). Nevertheless, there are many private companies which pay a smaller percentage of their revenue to State and local governments than the publicly owned systems of the TVA area pay, and none of these companies sells power at rates which are lower than the rates in the TVA area. The 13 private companies serving areas adjacent to the area served by the TVA system range in their payments from 4.6 percent of taxable revenue to 11.4 percent. The rates at which they sell power are higher than rates in the TVA area, regardless of the relative size of their tax payments.

All the earnings of TVA belong to the Federal Government, which owns and operates the power generation and transmission facilities. No percentage of net income is reported paid to the Federal Treasury under the heading of "income tax." In fiscal year 1954 TVA's net income as low due primarily to a prolonged drought which reduced the amount of power which could be produced from low-cost hydro sources, while greatly increased loads required the operation of high-cost energy sources. The amount of net income remaining after allowance for the cost of money to the Government was about $11 million. All of this money belongs to the Federal Government. A private company would have paid an income tax of approximately $5,500,000 on this "profit."

Over the full period from TVA's inception to the present, 1933 to 1954, the Government earned $264 million on the TVA power investment, after paying all operating and maintenance expenses, depreciation, and the payments in lieu of State and local taxes discussed above. These earnings represent an average annual return of 4 percent on the Government's average investment during this 21-year period.

During the past 21 years, the average cost of money to the Government was about 2 percent, and if that rate of interest had been charged on the power investment for the full period, it would have amounted to $132 million, exactly half of the 4-percent return. The remaining $132 million is the Government's margin

over and above all operating and maintenance expenses, depreciation, payments in lieu of State and local taxes, and interest. This is 15.9 percent of TVA's gross power revenues of $829 million for the period.

For the purpose at hand, the $132 million developed in the above calculation can be compared with the income taxes the Government might have received from a private utility with the same gross revenues in those years. The Federal Power Commission reports the income tax payments of the Nation's private electric companies as a percent of their gross revenue from power sales. For the last 21 years, income taxes ranged from about 3 percent of gross revenue in the early thirties to 12.9 percent in 1952. The rate for 1953 was 12.8 percent. Applying the annual percentages to TVA's revenue, a typical privately owned utility would have paid Federal income taxes of about $86 million from $829 million of sales during the period. The margin of $132 million which TVA earned for the Government was $46 million more than that amount.

Mr. DAVIS. Who prepared the statement?

Mr. EVINS. It was prepared for information at the request of a Member of Congress by the staff of the TVA.

I believe it has been pointed out and I am not sure it has been fully clarified, that in the event TVA was not enabled to supply power to its present contract customers, that TVA in effect, would be in violation of existing contracts?

Mr. VOGEL. No; I do not believe that would necessarily follow. As I have pointed out a number of times, where the contract contains an interruptible clause, a clause of that nature would make it possible to curtail the supply without violating the intent or letter of the contract.

Mr. EVINS. Are there any further questions, Mr. Davis?

Mr. DAVIS. No; I have no further questions.

Mr. EVINS. There will be no further questions, I understand, from representatives of TVA; therefore, General Vogel and members of the TVA staff are excused. We appreciate your testimony. The committee stands adjourned until 10 o'clock tomorrow.

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